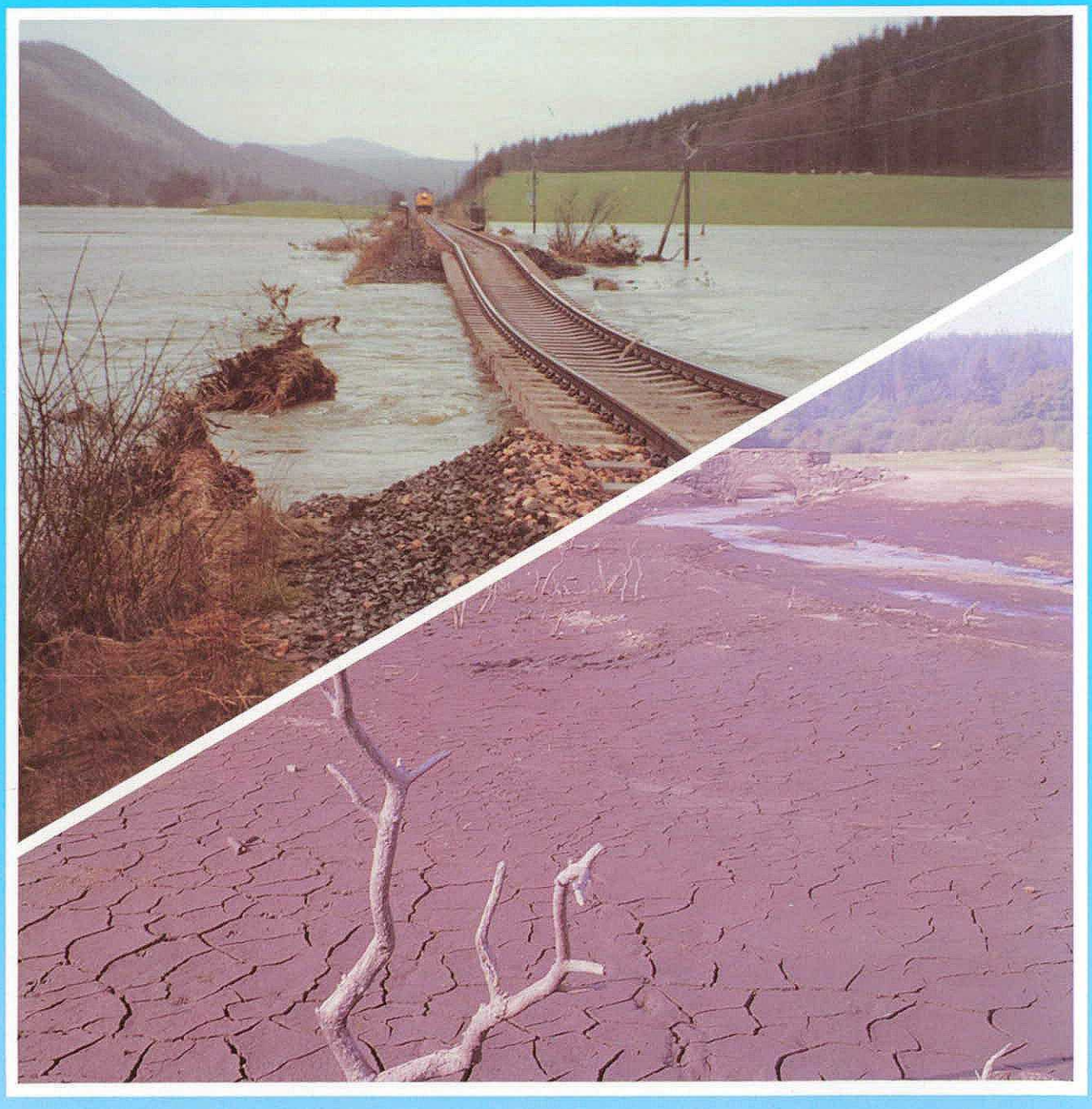
Hydrological data UK



1990 YEARBOOK

INSTITUTE OF HYDROLOGY • BRITISH GEOLOGICAL SURVEY

HYDROLOGICAL DATA UNITED KINGDOM

1990 YEARBOOK

An account of
rainfall, river flows, groundwater
levels and river water quality
January to December 1990

Institute of Hydrology **British Geological Survey**

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FOREWORD

1990 was a remarkable year in hydrological terms. The range of recorded variation in rates of river flow and groundwater recharge was extended in a number of regions. Widespread flooding in February was succeeded by severe drought conditions in the English lowlands. By late summer, the parched soils and exceptionally warm weather together with the threat posed to water resources and the aquatic environment, for the second successive year, stimulated considerable debate. Particular attention focused on the degree to which the very unusual conditions recently experienced may constitute early evidence of the impact of climatic change in the United Kingdom.

A principal function of the Hydrological data UK series is to document and disseminate information relating to contemporary hydrological conditions and to provide both a perspective within which to examine the recent exceptional events and a benchmark against which any future changes may be assessed.

The Hydrological data UK series of Yearbooks and reports was launched in 1985 as a joint venture by the Institute of Hydrology (IH) and the British Geological Survey (BGS); both organisations are component bodies of the Natural Environment Research Council (NERC). Such a collaborative enterprise arose naturally from the close liaison maintained between those responsible for the management of the national Surface Water Archive, at IH, and their counterparts at BGS concerned with the national Groundwater Archive. The work is overseen by a steering committee which includes representatives of Government departments, the National Rivers Authority and the water industry from England, Wales, Scotland and Northern Ireland.

The published series includes an annual yearbook and, every five years, a catalogue of river flow gauging stations and groundwater level recording sites together with statistical summaries. These six volumes of the five-year cycle are available individually but are also designed to be inserted in a ring binder. Further details of these arrangements are given on page 192.

Professor W.B. Wilkinson
Director, Institute of Hydrology


National Rivers Authority region or River Purification Board boundary
Hydrometric area number and boundary
HIGHLAND R.P.B.
NORTH EAST R.P.B.
TAY R.P.B.
FORTH R.P.B.
CLYDE R.P.B.
TWEED R.P.B.
SOLWAY R.P.B.
NORTHUMBRIAN
YORKSHIRE
NORTH WEST
SEVERN-TRENT
ANGLIAN
WELSH
THAMES
WESSEX
SOUTHERN
SOUTH WEST
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84
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86
87
88
89
90
91
92
93
94
95
96
97
101
102
103
104
105
106
107
108
204
202
205

CONTENTS

INTRODUCTION

The 1990 Yearbook is the second edition since responsibility for the publication of data, upon which assessments of water resources in England and Wales may be made, was transferred (under the Water Act 1989) from the Department of the Environment to the National Rivers Authority.

This volume is the tenth Yearbook in the Hydrological data UK series and the final volume in the second five-year publication cycle (1986-90).

The 1990 Yearbook represents the thirty-first edition in the series of surface water publications which began with the 1935-36 Surface Water Yearbook. As a result of the incorporation of groundwater data in the Yearbook, this volume is also the fifteenth edition in the series of groundwater data publications which began with the 1964-66 Groundwater Yearbook.

Apart from summary information, surface water and groundwater data on a national basis were published separately prior to the introduction of the Hydrological data UK series. In common with the earlier editions, the 1990 Yearbook brings together the principal data sets relating to river flow, groundwater levels and areal rainfall throughout the United Kingdom. Also included are water quality data for a selection of monitoring sites throughout the UK. A comprehensive hydrological review of the year is presented and a feature article examines the extraordinary spatial and temporal variations in rainfall, runoff and aquifer recharge patterns during 1990.

A description is given of the surface water and groundwater archives together with illustrative examples of the standard data retrieval options developed to service user requirements.

Publication of river flow data for Great Britain started with the series of Surface Water Yearbooks. The first edition, which was published in 1938 for the water year (October-September) 1935-36, also included selected data for the previous fifteen years; the edition for 1936-37 followed in 1939. Both these publications were prepared under the direction of the Inland Water Survey Committee. Assisted by the Scottish Office, the Committee continued to publish hydrological data after the Second World War; the Yearbook for the period 1937-45 was published as a single volume in 1952. Due to economic stringency, the Survey was suspended in 1952 for a period of two years but was then re-formed as the Surface Water Survey Centre of Great Britain. A Yearbook covering the years 1945-53 was published in 1955.

In 1964 the Survey was transferred to the Water Resources Board where it remained until the Board was disbanded in 1974. The work of collecting and publishing surface water information in England and Wales then passed to the newly created Water Data Unit of the Department of the Environment (DOE). Yearbooks were published jointly each year by these organisations and the Scottish Office for the water years 1953-54 to 1965-66; thereafter information for the five calendar years 1966 to 1970 was published in one volume in 1974. Following editions were renamed 'Surface Water: United Kingdom' to mark the inclusion of the first records from Northern Ireland and in recognition of the move away from single year volumes. Two volumes of Surface Water: United Kingdom, covering the years 1971-73 and 1974-76 were published jointly by the Water Data Unit, the Scottish Development Department (now - The Scottish Office Environment Department) and the Department of the Environment for Northern Ireland.

Following the transfer of the Surface Water Archive to the Natural Environment Research Council in 1982, the final edition of Surface Water: United Kingdom, for the years 1977-80, was prepared by the Institute of Hydrology at the request of the Water Directorate of the Department of the Environment, and published in 1983.

The 1981 and 1982 Yearbooks were prepared concurrently and were, in 1985, the first Yearbooks published by the Natural Environment Research Council. Further Yearbooks - the editions for 1983 to 1989 - were published over the following five years.

A compilation of 'Groundwater levels in England during 1963', which was produced by the Geological Survey of Great Britain (prior to its incorporation into the Institute of Geological Sciences), was the precursor to the publication of groundwater level data on a national basis. The more formal Groundwater Yearbook series was instigated by the Water Resources Board which published the inaugural edition, and a further volume for 1967, both covering England and Wales. In 1975 a third Yearbook, for 1968-70, was published by the Water Data Unit. The Groundwater: United Kingdom series was introduced in 1978 with the production of the 1971-73 volume, also published by the Water Data Unit.

Following the transfer of the Groundwater Archive to the Institute of Geological Sciences (now the British Geological Survey), the second edition of Groundwater: United Kingdom, covering the period 1974-80, was prepared by the Institute of Hydrology at the request of the Water Directorate of the Department of the Environment. Subsequently, groundwater level data have been included in the Hydrological data UK publications.

SCOPE AND SOURCES OF INFORMATION

The format of the 1990 Yearbook follows that of the recent editions in the Hydrological data UK series. The rainfall, runoff and groundwater review material - compiled in separate sections prior to 1986 - is incorporated in a single hydrological review of the year. Data presentation in the water quality section is consistent with the established Yearbook pattern - data are given both for the featured year and, to provide a suitable perspective, for the preceding period of record.

Emphasis is placed upon ready access to basic data both within the Yearbook and through the complementary data retrieval facilities.

A companion publication to the individual Yearbooks - the 'Hydrometric Register and Statistics' volume provides a comprehensive reference source for hydrometric information which does not change materially from year to year; the first edition (for 1981-5) was published in 1987, see page 192.

The Yearbook contents have been abstracted primarily from the Surface Water and Groundwater Archives. Water quality data have been provided from the Harmonised Monitoring Archive which is currently maintained by Her Majesty's Inspectorate of Pollution (DOE). Similar data from Northern Ireland have been provided by the Environmental Protection Division of the Department of the Environment (NI).

The National Rivers Authority (NRA) is responsible for the initial collection and processing of most river flow and groundwater level data in England and Wales. Following the 1989 Water Act, the new Water Service PLCs assumed responsibility for a small number of important monitoring sites for which historical - and a few contemporary - data sets are held on the Surface Water and Groundwater Archives. The seven River Purification Boards (RPBs) are responsible for most hydrometric data acquisition in Scotland. In Northern Ireland responsibility is shared between the Departments of Environment and Agriculture. These organisations also supplied valuable material relating to significant hydrological events during 1990.

The majority of the rainfall data, and some of the material incorporated in the hydrological review, has been provided by the Meteorological Office. For historical comparisons of the rainfall over England and Wales, a data set based upon the homogeneous series derived by the Climatic Research Unit of the University of East Anglia has been used.

Additional material has been provided by various research bodies and public undertakings.

Most of the rainfall data published in the Hydrological data UK series are in the form of monthly rainfall totals for catchment areas (see page 41). For details of monthly and annual rainfalls associated with individual raingauge sites reference should be made to the 'RAINFALL' series published regularly by the Met. Office. Brief details of the contents and availability of this publication, together with a short description of other rainfall and climatological data sets published by the Met. Office, are given below.

The National Environment Research Council acknowledges and extends its appreciation to all who have assisted in the collection of information for this publication.

Rainfall and Climatological Data

The Meteorological Office maintains the national archives of rainfall and climatological data at its headquarters at Bracknell. Specific items, such as daily and hourly rainfalls from gauges and radar (from the PARAGON system) may be obtained by application to the Commercial Services Division. Summaries of the data are also published regularly and a list of current titles is given below:

1. *RAINFALL 19__/__*
   This contains monthly and annual rainfall totals for some 5000 raingauges and is available approximately one year after the title year at a cost of £9 (for the 1990 edition).
2. *Snow Survey of Great Britain 19__/__*
   This contains the daily and monthly reports of snow conditions from selected stations covering the winter and costs about £5.
3. *Monthly Weather Report*
   This is published monthly and contains climatological means for more than 550 UK observing stations; in addition an introduction and annual summary are produced yearly. The publication should be available six to nine months after the month concerned, costs around £2 and is available only from Her Majesty's Stationery Office (HMSO) or their stockists.
4. *MORECS (Meteorological Office Rainfall and Evaporation Calculation System).*
   This is a weekly issue of maps and tables of evaporation, soil moisture deficit, effective rainfall and the weather variables used to calculate them. The data are used to provide values for 40 km squares and various sets of maps and tables are available according to customer requirements.

Further information about these and other publications may be obtained from:

Meteorological Office, Commercial Services,
Johnson House, London Road, Bracknell,
Berks RG12 2SY Tel: (0344) 420242

Summary

1990 was a remarkable year in hydrological terms: the range of recorded variation in rates of river flow and aquifer recharge was extended in a number of regions of the United Kingdom. Regional variations in precipitation were exceptionally large - Scotland registered its wettest year on record by an appreciable margin whilst some localities in eastern England recorded their second lowest annual total this century. The very unusual spatial distribution was associated with equally notable temporal variations in rainfall. Precipitation over the 1989/90 winter season was abundant in most areas, especially so in February when rivers were in spate from Cornwall to northern Scotland. Floodplain inundation was very widespread and prolonged. Subsequently, England and Wales recorded its driest spring for almost 100 years and the English lowlands experienced severe drought conditions over much of the latter half of the year.

Mean temperatures and total sunshine hours in 1990 eclipsed the records established in 1989 over large parts of southern Britain. Potential evaporation (PE) totals for the year were substantially above average commonly surpassing the corresponding totals for 1989 - themselves often the highest in a series extending back to 1961. Conversely, calculated actual evaporation (AE) losses in the English lowlands were typically the lowest since 1976 - largely as a result of the inhibiting influence of high, and sustained, soil moisture deficits (SMDs) from the spring through until early December 1990. However, in the wetter west and north - where many strategically important reservoirs are located - actual evaporation losses for 1990 were somewhat above average.

From the early spring, river flow recessions continued in some areas with only minor interruptions for over seven months and new absolute minimum flows were established on a considerable number of rivers - at a few gauging stations new period of record maximum flows had also been registered in February. For the third successive year the warm dry conditions, in the lowlands particularly, resulted in only a sluggish autumn decline in soil moisture deficits. The seasonal upturn in river flows was again inordinately delayed and autumn runoff totals were the lowest on record over wide areas.

In most aquifers, the beneficial effect of substantial late-winter infiltration, which produced dramatic water-table rises in some districts, was counteracted by the exceptionally early end to the recharge season. Sustained high SMDs in 1990 also served to greatly restrict the length of the 1990/91 aquifer recharge season. The failure of any appreciable autumn recovery in groundwater levels to become established in the English lowlands resulted in extremely low - often unprecedented - groundwater levels which persisted into 1991.

Throughout much of eastern and southern Britain, the 1989/90 winter (December - February) constituted a wet interlude in a notably persistent drought. Regional rainfall deficiencies of the magnitude registered towards the end of 1990 are relatively rare and, following a decade largely characterised by healthy river flows and groundwater levels, the latter half of 1990 provided a sharp reminder of the particular susceptibility of the English lowlands to drought conditions. The shrinkage of the drainage network, the loss - albeit temporary - of aquatic habitats, the reduction in the assimilative capacity of watercourses in addition to the stress on water resources testify to the sensitivity of hydrological conditions in those parts of Britain where even in a typical year annual runoff and recharge totals are modest.

Rainfall

Rainfall in the United Kingdom in 1990 totalled 1211 mm, substantially above the 1941-70 average. For the UK as a whole, 1990 ranks among the ten wettest years this century, only 1954 and 1960 have been appreciably wetter in the last 60 years. More notable though was the spatial distribution of the rainfall. The normal west-to-east rainfall gradient across Great Britain was accentuated throughout most of the 1980s and this tendency achieved an extreme expression in 1990; whilst similarities with the 1989 pattern could readily be recognised, the contrast between rainfall amounts in parts of the English lowlands and the Highlands of Scotland has no modern parallel.

Despite below average annual rainfall in parts of the eastern lowlands, the 1990 Scottish rainfall total (1918 mm) comfortably exceeded the previous maximum in a rainfall series extending back to 1869. 1990 continues a very notable sequence - interrupted in 1987 - of wet years in Scotland. Rainfall has been above average in 11 of the last 12 years and

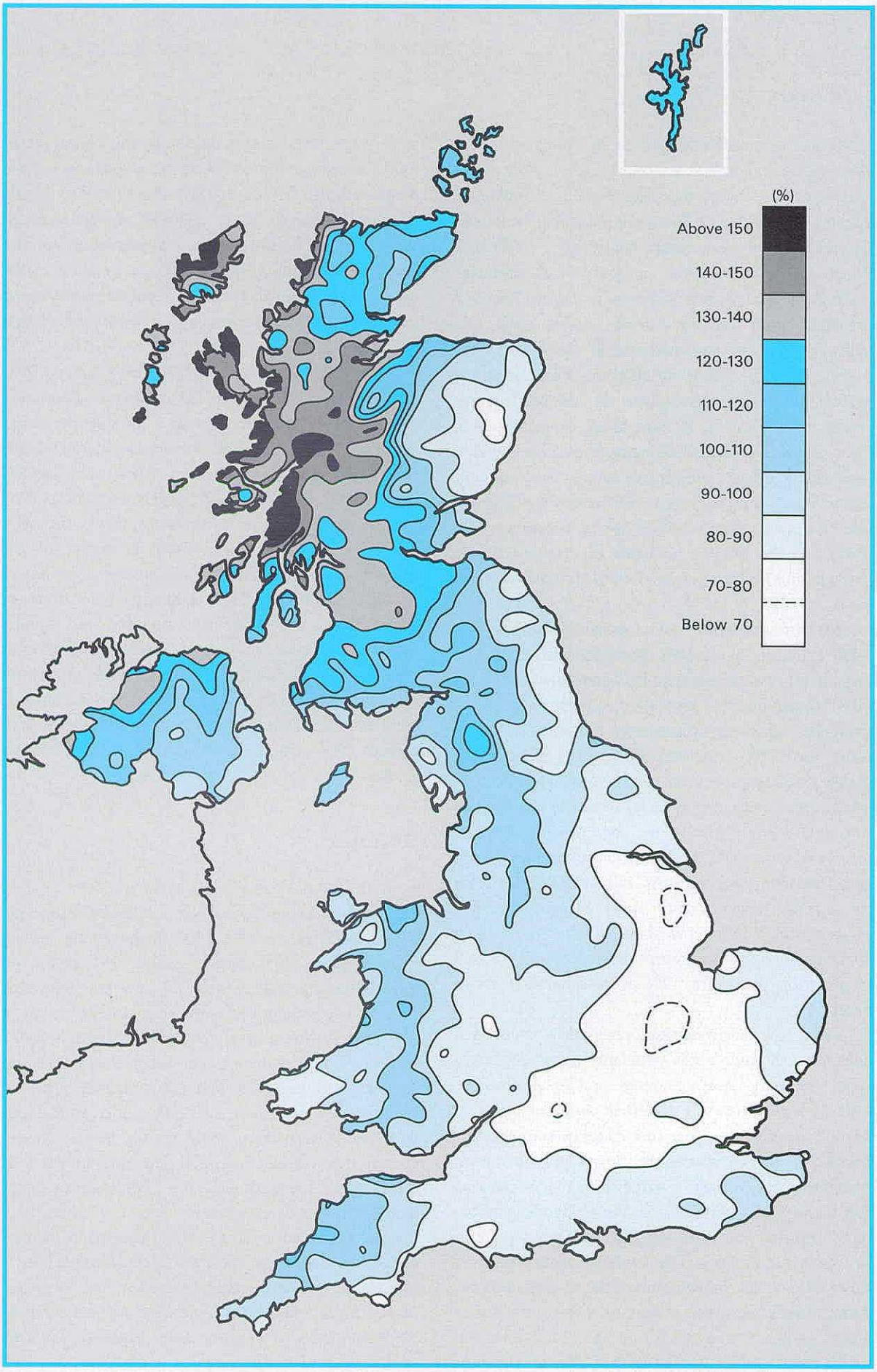

Figure 1. Annual rainfall in 1990 as a percentage of the 1941–70 average. Source: Meteorological Office

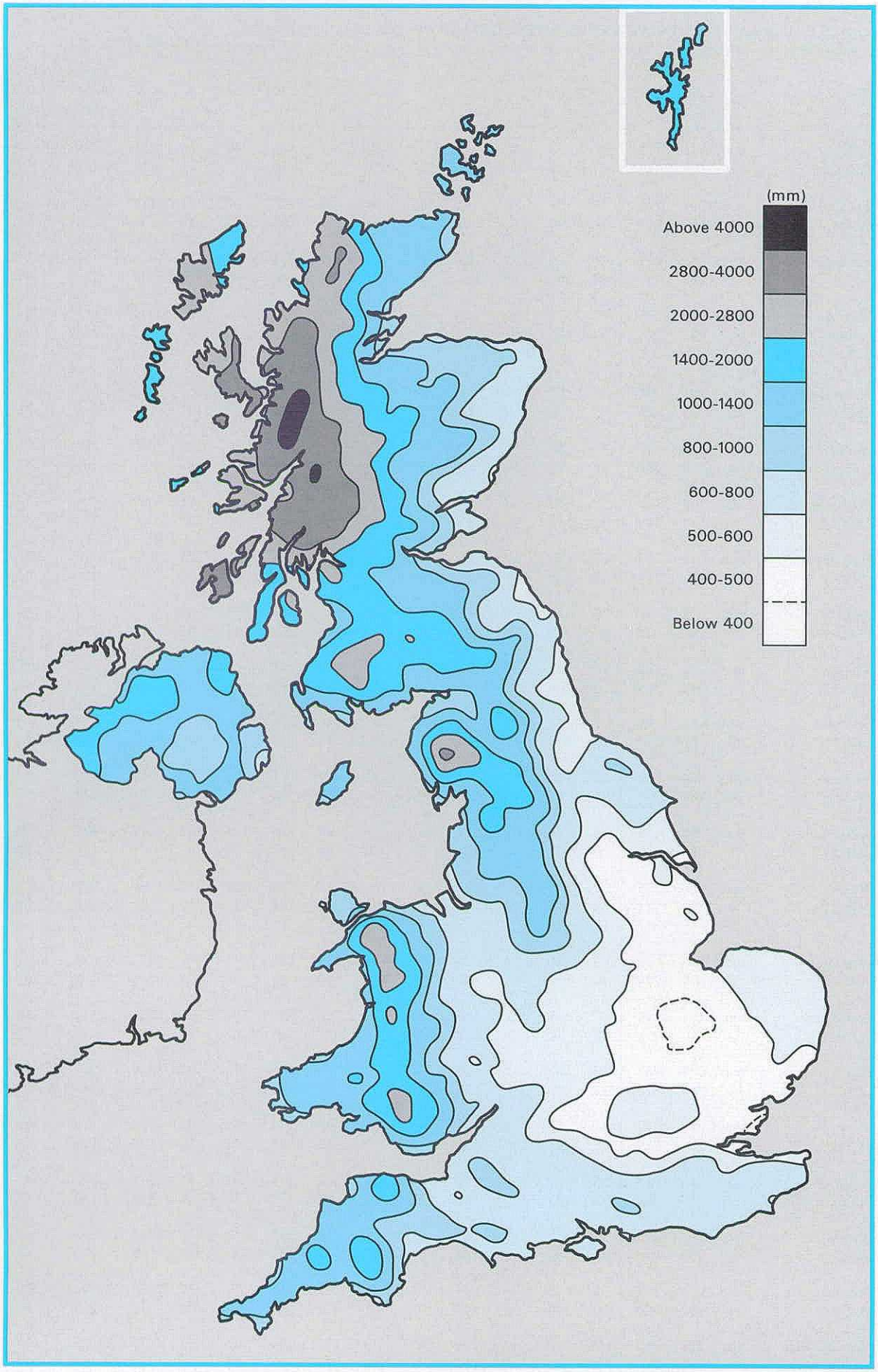

Figure 2. Annual rainfall in 1990.

Source: Meteorological Office

TABLE 1 1990 RAINFALL IN MM AND AS A PERCENTAGE OF THE 1941-70 AVERAGE

1990		...												Year	Oct-Mar Rainfall 1989/90	Apr-Sep Rainfall 1990
United Kingdom	mm	171	194	98	59	36	93	49	72	84	144	80	131	1211	770	393
	%	164	249	140	86	48	129	56	70	82	136	71	116	111	133	77
England and Wales	mm	133	142	23	38	25	72	35	46	53	103	67	101	838	590	269
	%	155	218	39	65	37	118	48	51	64	124	69	112	92	123	62
Scotland	mm	250	294	247	96	54	128	75	119	149	213	102	191	1918	1134	621
	%	182	283	268	107	59	139	67	92	109	143	72	122	134	145	95
Northern Ireland	mm	138	186	63	72	49	121	62	91	46	204	88	115	1235	651	441
	%	133	248	90	106	67	153	67	88	43	191	86	101	113	114	84
North West (NRA)	mm	197	193	45	57	49	99	58	73	86	175	73	151	1256	690	422
	%	176	238	63	74	60	119	56	58	70	148	60	121	103	111	71
Northumbria (NRA)	mm	112	135	32	25	51	69	40	53	53	107	61	127	865	460	291
	%	140	205	62	45	80	113	52	53	67	143	65	169	98	104	67
Severn-Trent (NRA)	mm	106	109	18	30	19	63	27	37	46	93	52	87	687	502	222
	%	152	206	35	57	30	113	41	46	69	143	66	124	89	129	58
Yorkshire (NRA)	mm	118	112	23	25	29	83	32	47	40	92	55	121	777	473	256
	%	153	175	43	45	47	143	46	52	56	133	62	163	93	111	63
Anglian (NRA)	mm	52	75	15	34	16	45	21	31	32	51	53	47	472	317	179
	%	100	179	38	85	34	92	37	48	61	98	85	89	77	105	58
Thames (NRA)	mm	92	114	12	35	7	47	17	35	34	58	34	68	553	461	175
	%	148	243	26	76	12	90	28	50	55	91	47	103	79	129	51
Southern (NRA)	mm	121	136	6	48	10	61	13	33	38	105	63	65	699	534	203
	%	159	239	12	100	18	122	22	45	53	135	67	80	88	122	57
Wessex (NRA)	mm	124	158	14	35	12	62	31	41	49	87	51	78	742	680	230
	%	148	268	24	65	16	115	50	50	62	106	53	87	85	132	58
South West (NRA)	mm	195	238	25	46	25	99	61	59	69	128	106	124	1175	902	359
	%	151	264	30	65	30	152	73	58	66	113	79	92	98	132	71
Welsh (NRA)	mm	240	215	37	48	34	98	53	64	85	152	112	163	1301	980	382
	%	176	224	43	56	37	119	56	54	68	118	78	112	97	133	64
Highland R.P.B.	mm	293	365	409	136	54	140	93	156	234	225	147	241	2493	1513	813
	%	179	274	359	119	52	127	73	105	148	121	87	123	145	157	107
North East R.P.B.	mm	108	149	87	45	49	110	43	75	86	136	95	97	1080	514	408
	%	119	201	140	74	64	157	47	70	99	140	92	95	106	97	83
Tay R.P.B.	mm	239	287	178	61	44	128	38	73	68	186	63	149	1514	977	412
	%	203	312	217	81	46	154	37	62	59	153	53	111	121	146	70
Forth R.P.B.	mm	222	222	142	55	39	125	49	83	68	194	56	143	1398	816	419
	%	224	288	206	81	46	167	50	72	63	183	52	131	125	144	76
Clyde R.P.B.	mm	316	341	295	127	57	138	96	151	172	301	94	226	2314	1376	741
	%	196	302	281	123	59	134	74	106	98	165	56	121	139	150	99
Tweed R.P.B.	mm	167	178	52	31	46	106	52	61	69	159	53	152	1126	573	365
	%	180	258	90	51	60	156	58	53	74	181	51	169	112	114	73
Solway R.P.B.	mm	254	285	94	72	76	121	74	106	81	218	77	192	1650	956	530
	%	181	306	103	82	83	134	67	81	54	151	53	127	116	125	80
Western Isles Orkney and Shetland	mm	223	253	229	117	49	108	87	118	174	140	114	165	1577	1075	653
	%	164	246	249	141	72	142	104	126	138	97	83	108	122	141	123

the mean annual rainfall over the post-1978 period is some 10 per cent above the 1941–70 average. By contrast, rainfall in England and Wales was well below average for the second successive year (1989 was a little drier) and the area over which annual rainfall totals of less than 500 mm were recorded was significantly greater than for any year since 1964.

The rainfall pattern throughout the United Kingdom relative to the 1941–70 average is shown in Figure 1 (page 4); Figure 2 shows the actual rainfall totals. As in 1989, the range of isopleths is notable both in percentage and absolute terms. Whilst a considerable proportion of western Scotland recorded annual totals more than 30 per cent greater than the 1941–70 average much of the English lowlands registered below 80 per cent. Such regional contrasts in percentage rainfall make for very large differences in actual rainfall totals. Totals in some parts of the Highlands exceeded 5500 mm whereas at Lowest Hilton (Cambridgeshire) the annual total reached only 345 mm; it is rare for the range of UK rainfall totals to extend so substantially beyond an order of magnitude. Although the greatest contrasts in rainfall could be identified along a north-west/south-east transect across Britain, the rainfall gradient across Scotland was notable in itself. Echoing a similar pattern in 1989, rainfall increased from well below 800 mm in the lower Dee Valley (Grampian Region) to more than 4000 mm in the Cairngorm headwaters; a distance of less than 100 km.

Table 1 provides a breakdown of monthly and half-yearly rainfall totals in 1990 both on a countrywide basis and according to the major administrative divisions within the water industry (see frontispiece). The main features of the temporal distribution were a notably wet winter (December-February), a remarkably dry spring which, building on a long-term rainfall deficiency, led to widespread drought conditions through the summer and autumn; away from the eastern lowlands these were ameliorated over the last three months of the year.

Evaporation and Soil Moisture Deficits

As in 1989, weather conditions were conducive to high rates of evaporation throughout 1990. For the third successive year potential evaporation losses were substantially greater than the long term average in all regions of the UK, especially so in southern Britain. Actual evaporative losses were also well above average in the more maritime west but in eastern Britain and in the English lowlands particularly, high soil moisture deficits constrained transpiration rates and AE losses for the year were up to 300 mm short of the corresponding PE values. AE losses normally display only a muted variability across the

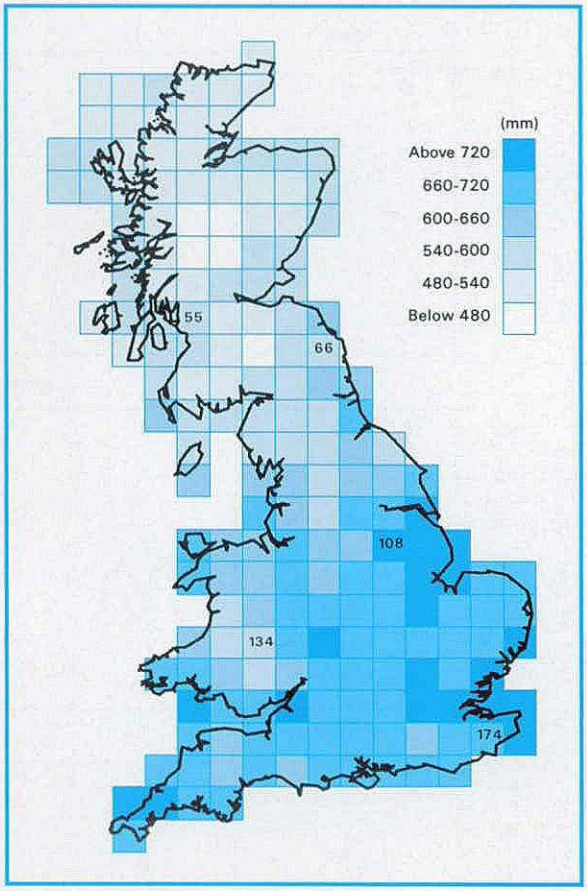

Figure 3. Potential evaporation (for grass) in 1990 – in millimetres. Data Source: MORECS

UK but in 1990 the spatial variation was considerable and the range of annual totals is without recent parallel (see page 31).

Figure 3 shows 1990 potential evaporation totals based upon MORECS (Meteorological Office Rainfall and Evaporation Calculation System) data. Over large parts of southern Britain calculated PE losses approached, or exceeded, 700 mm for the second year in succession; such annual totals are more typical of central France. Relative to the long term average, PE losses were more than 20 per cent above average in many areas. In the 30-year MORECS series, the 1990 totals rank either first or second for the great majority of the individual MORECS squares (generally the 1989 totals are also outstanding). PE totals were also greatly above average in Northern Ireland.

There was a considerable divergence from the normal seasonal growth and decay of soil moisture deficits in 1990 and, in hydrological terms, soil moisture conditions were almost as influential as actual rainfall totals in shaping the drought's severity from the late-spring. Figure 4 illustrates the variation in PE, AE and SMD for five representative MORECS squares; the locations of the featured squares are indicated on Figure 3. The very unusual conditions experienced over the 1989–90 period are perhaps best exemplified by the inordinately large

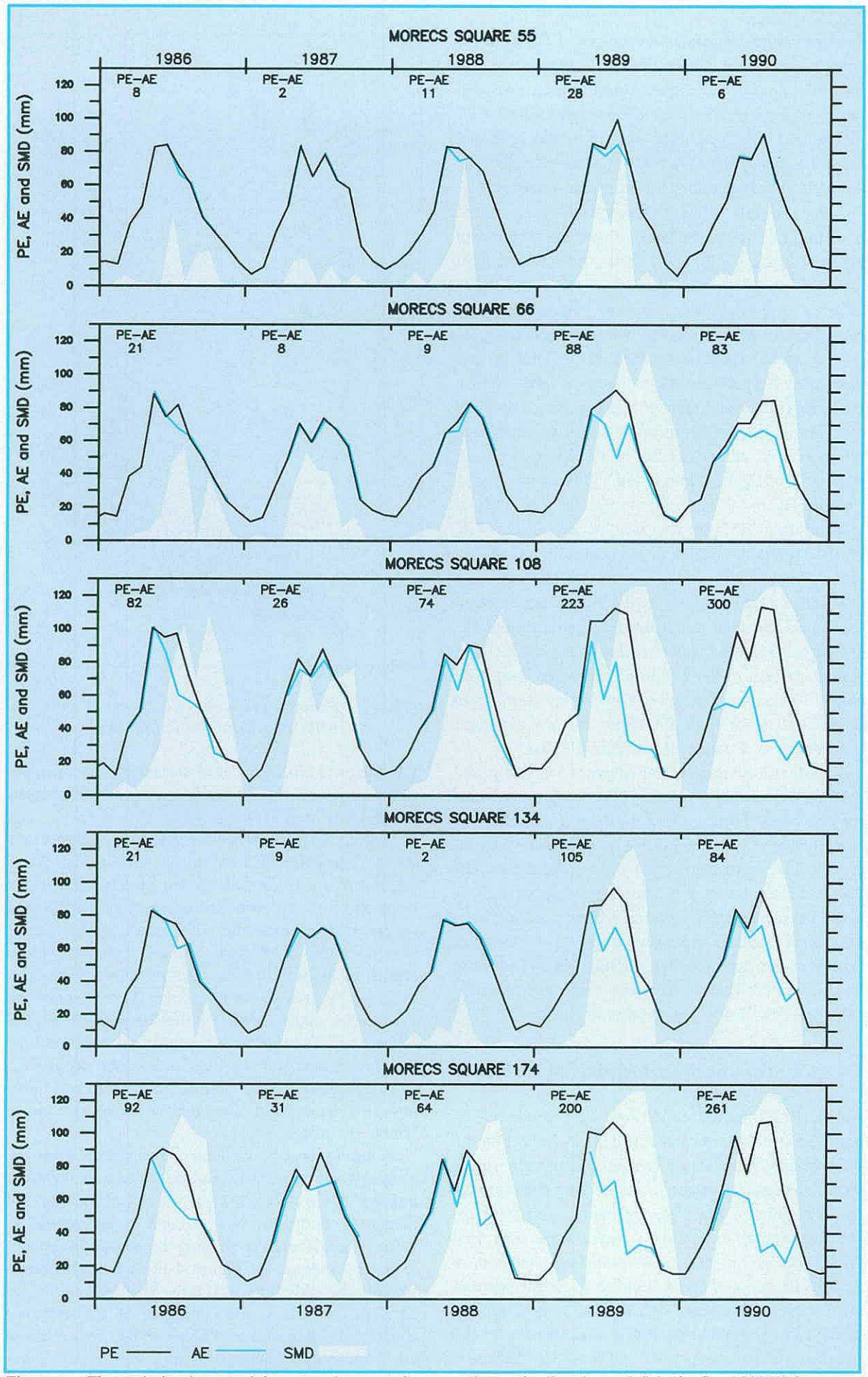

Figure 4. The variation in potential evaporation, actual evaporation and soil moisture deficits for five MORECS squares.

annual shortfalls of AE relative to PE which typified most regions. Even in central Wales (represented by square 134), where soils are seldom dry enough to greatly inhibit transpiration, shortfalls exceeded 80 mm in both years.

Notable SMDs were carried over from 1989 along the Northumbrian seaboard and near the Tweed estuary but by early February 1990 soils were wet throughout almost all of Great Britain. However, in the lowlands soils remained close to saturation for a very limited period and SMDs began to build over the winter/spring transition. Apart from Scotland, early spring witnessed a rapid increase in deficits such that by the end of March soils were drier than average across large areas of Britain. Exceptionally high spring evaporation losses contributed to further increases in SMDs in April - deficits exceeded 100 mm near St Abbs Head (Borders region), the latest in a remarkable sequence of MORECS deficits for this area. By May, actual evaporation rates began to fall considerably below the potential figure and SMDs increased steeply through the month. Entering the summer, deficits exceeded 100 mm throughout large parts of lowland England - positive anomalies (relative to the 1961-89 average) of 40 mm or more were widespread. Although cool and relatively wet conditions in June moderated the rate at which SMDs increased, July saw very dry soil conditions across almost all of Britain; in many western and upland regions (e.g. Cornwall and parts of the Cheviot Hills) SMDs exceeded twice the mid-summer average.

Substantial August rainfall in western Scotland helped accentuate regional contrasts in soil moisture conditions. Minimal deficits existed in the Highlands in early September whereas calculated deficits across much of eastern and lowland Britain had attained the MORECS ceiling (125 mm for a grass cover). Early autumn PE rates were exceptionally high especially in the English lowlands and with significant rainfall in the west, a sharp transition could be recognised from near average SMDs in the wetter areas to continuing high SMDs in the east. This regional differentiation became less distinct as soils wetted up in parts of southern England in October and November. Nonetheless, deficits remained very notable in parts of the lowlands at the end of autumn when SMDs greater than 80 mm characterised a substantial proportion of the Thames Valley (see page 31). December witnessed a brisk, if very belated, general decrease in residual deficits but significant SMDs remained at year-end in a broad zone from Lincolnshire and the lower Trent Valley to the Thames Estuary.

Runoff

The 1990 runoff total for the United Kingdom - approximately 700 mm - fell within ten per cent of the long term average but the distribution, whilst echoing the pattern of 1989 in some regions, was very unusual. Runoff throughout much of Scotland, the west especially, was abundant and often unprecedented whereas a large proportion of the English lowlands recorded runoff totals well below half of the long-term average.

Figure 5 provides a guide to 1990 runoff totals expressed as a percentage of the 1961-89 mean. The map is least precise in northern Scotland, the Welsh mountains and parts of the coastal lowlands of eastern England where the gauging station network is sparse or where data availability was limited for 1990. In such areas, assessments of residual rainfall (rainfall minus evaporation) totals were used to help delineate isopleths. Insufficient confirmatory flow data exist for the Scottish islands to allow runoff totals to be assessed with any confidence. As a result of a delay in the processing of the bulk of the river flow data for Northern Ireland, the 1990 runoff map covers Great Britain only.

The range of annual percentage runoff totals featured on Figure 5 exceeds that for the corresponding 1989 map which itself testified to a remarkable variation in runoff - both in absolute and percentage terms - across the UK. The most significant aspect of the runoff pattern implied by Figure 5 is the notable exaggeration in the runoff gradient. Exceptionally high runoff totals typified the wettest regions whereas runoff in the eastern lowlands was meagre relative even to the modest average which characterises these areas. Locally, percentage runoff totals lower than those indicated on Figure 5 typified a number of catchments where substantial abstractions reduced river flows to considerably below the natural discharge rate; see, for instance, the River Darent (in Kent) - page 116. Within the general pattern evident on Figure 5 the influence of catchment geology may also be recognised. In parts of Hampshire, Sussex and the Berkshire Downs for instance, 1990 runoff totals benefited from the lagged response of chalk springs to sustained rainfall towards the end of 1989.

Temporal variations in runoff rates were also markedly greater than in a normal year and the 1990 range of monthly flows exhibited by rivers in many regions is without recent parallel. Figure 6 (a-d) illustrates the variation in flows through 1990 for four representative gauging stations in Scotland, England, Wales and Northern Ireland. The data featured for the Kingston gauging station have been adjusted to account for the major water supply abstractions from the Thames above London. Data for the Burndennet gauging station are provisional. Daily and monthly hydrographs are shown for each monitoring site together with the corresponding extremes for the preceding period of record. The monthly hydrograph shows the 1990 flows as a solid black line and the blue line represents the 30-day running mean for the preceding record.

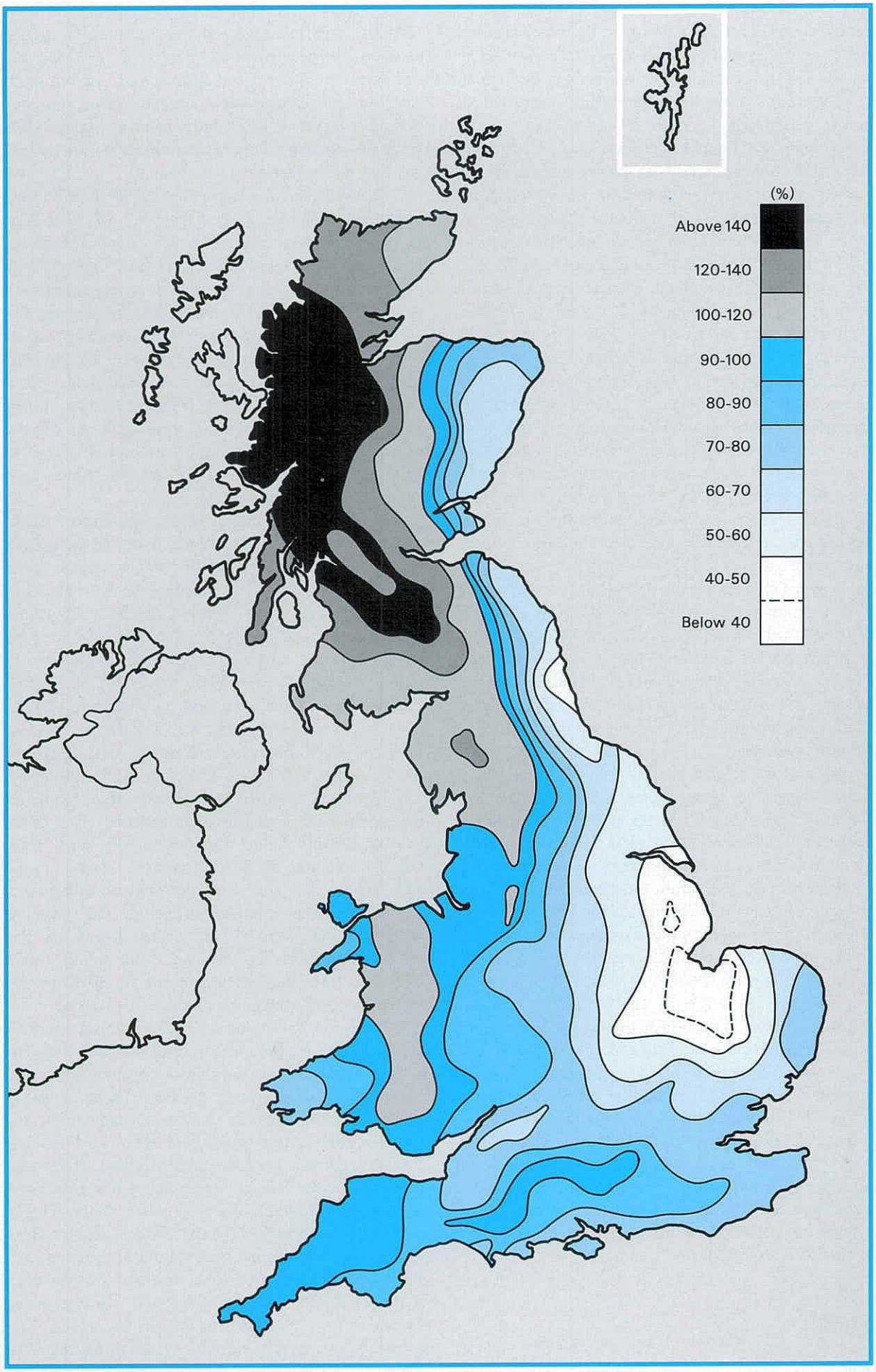

Figure 5. A guide to 1990 runoff expressed as a percentage of the 1961–89 average.

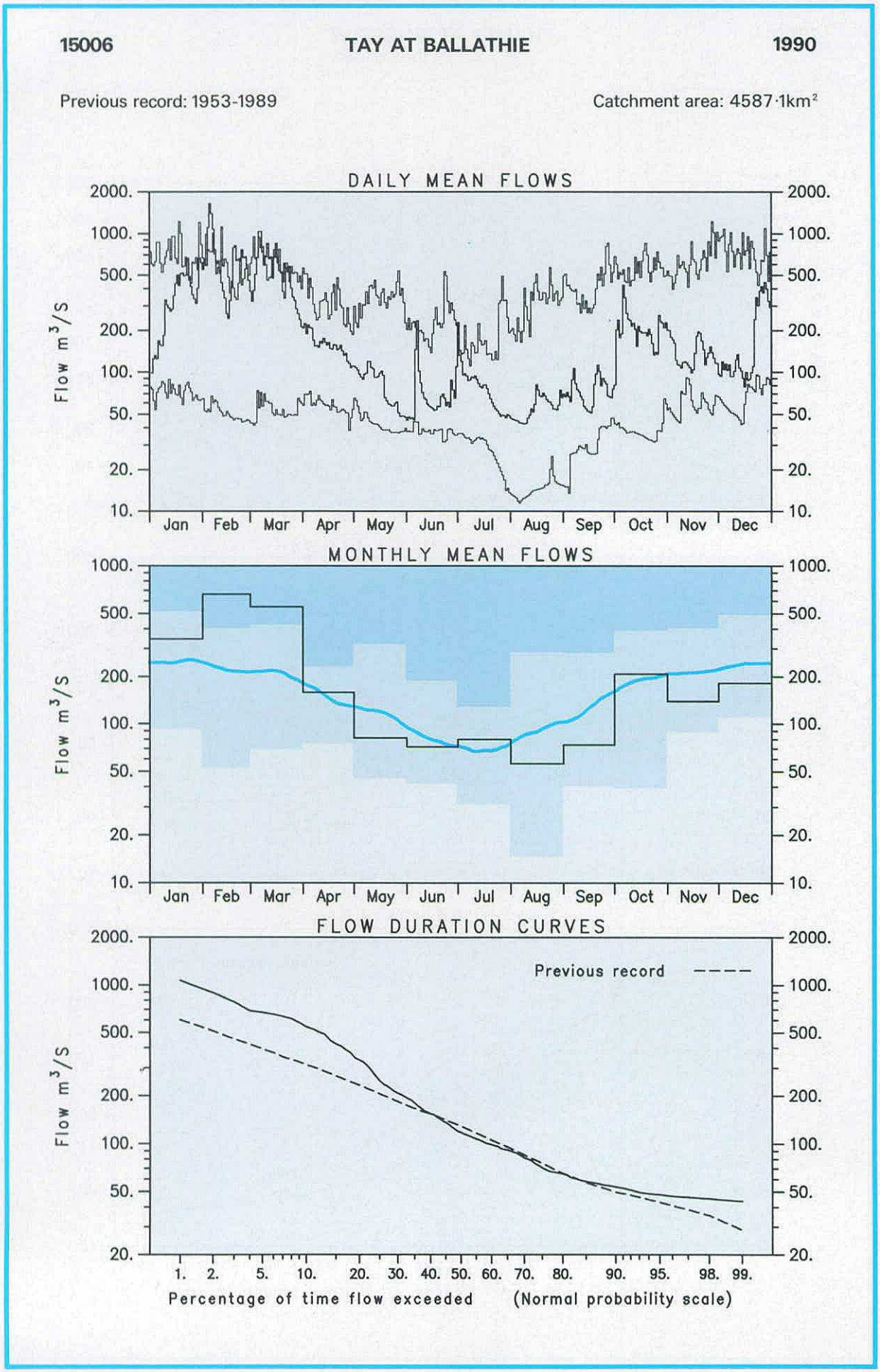

Figure 6(a). River flow patterns: Tay at Ballathie.

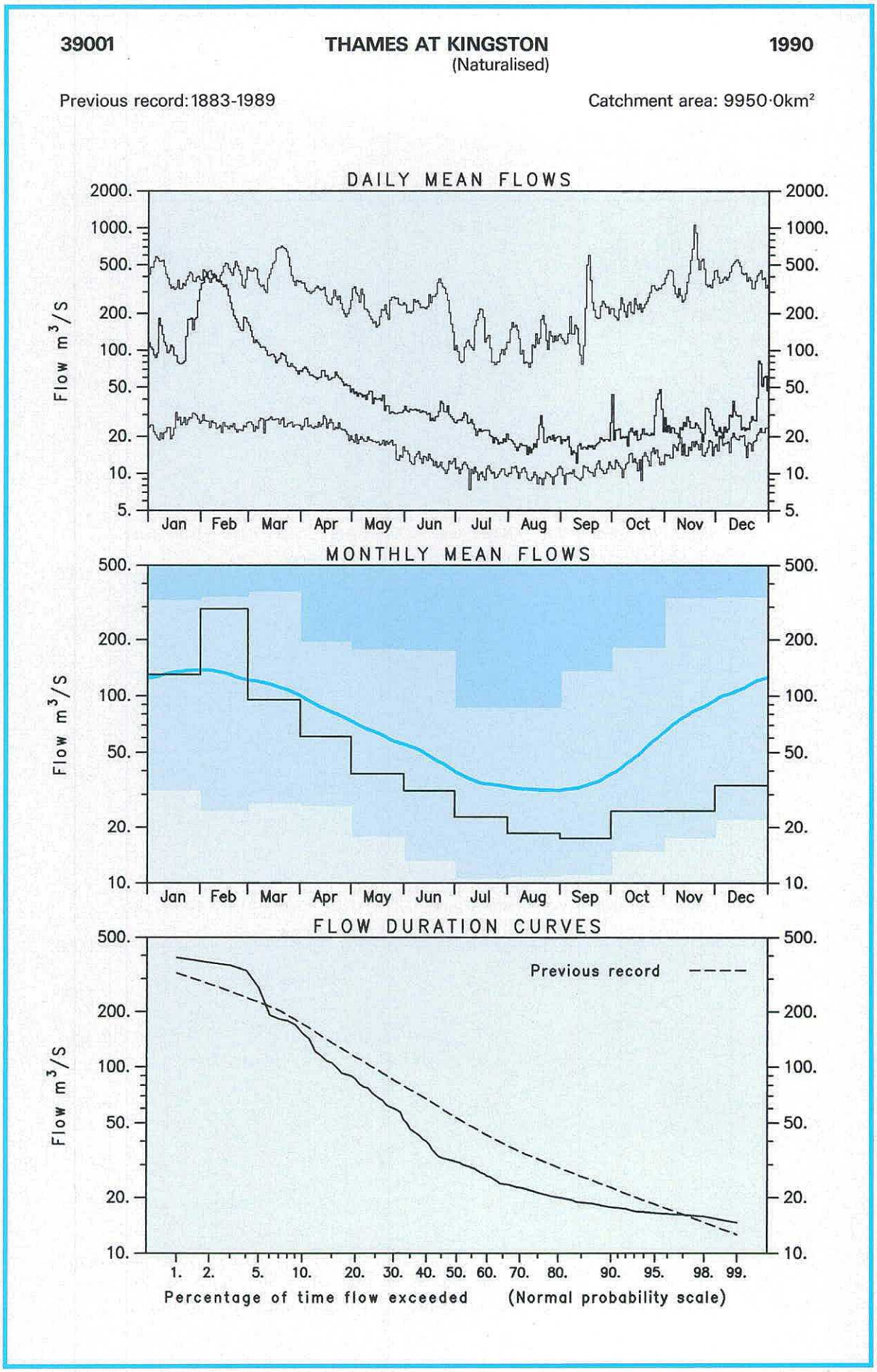

Figure 6(b). River flow patterns: Thames at Kingston.

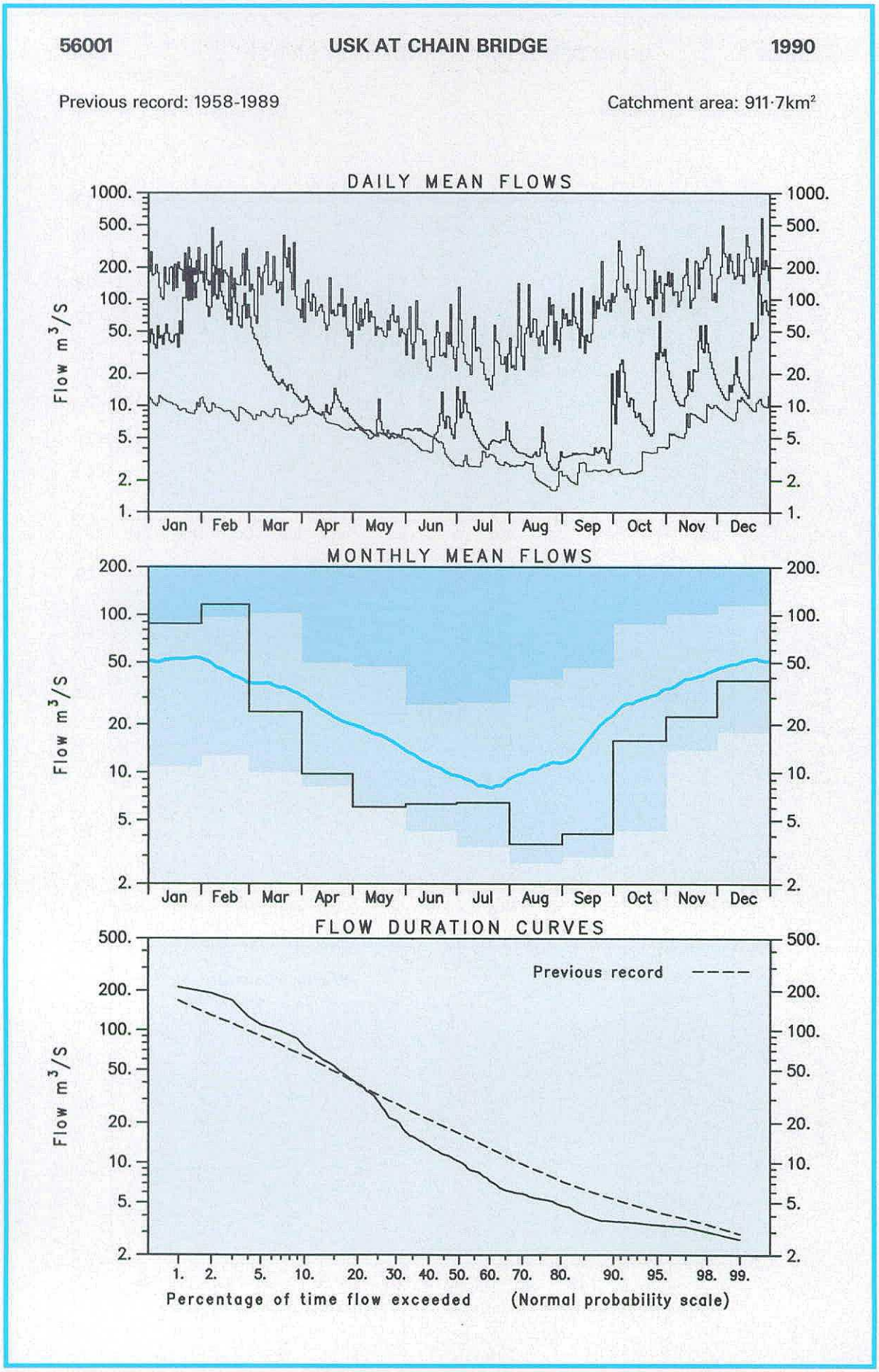

Figure 6(c). River flow patterns: Usk at Chain Bridge.

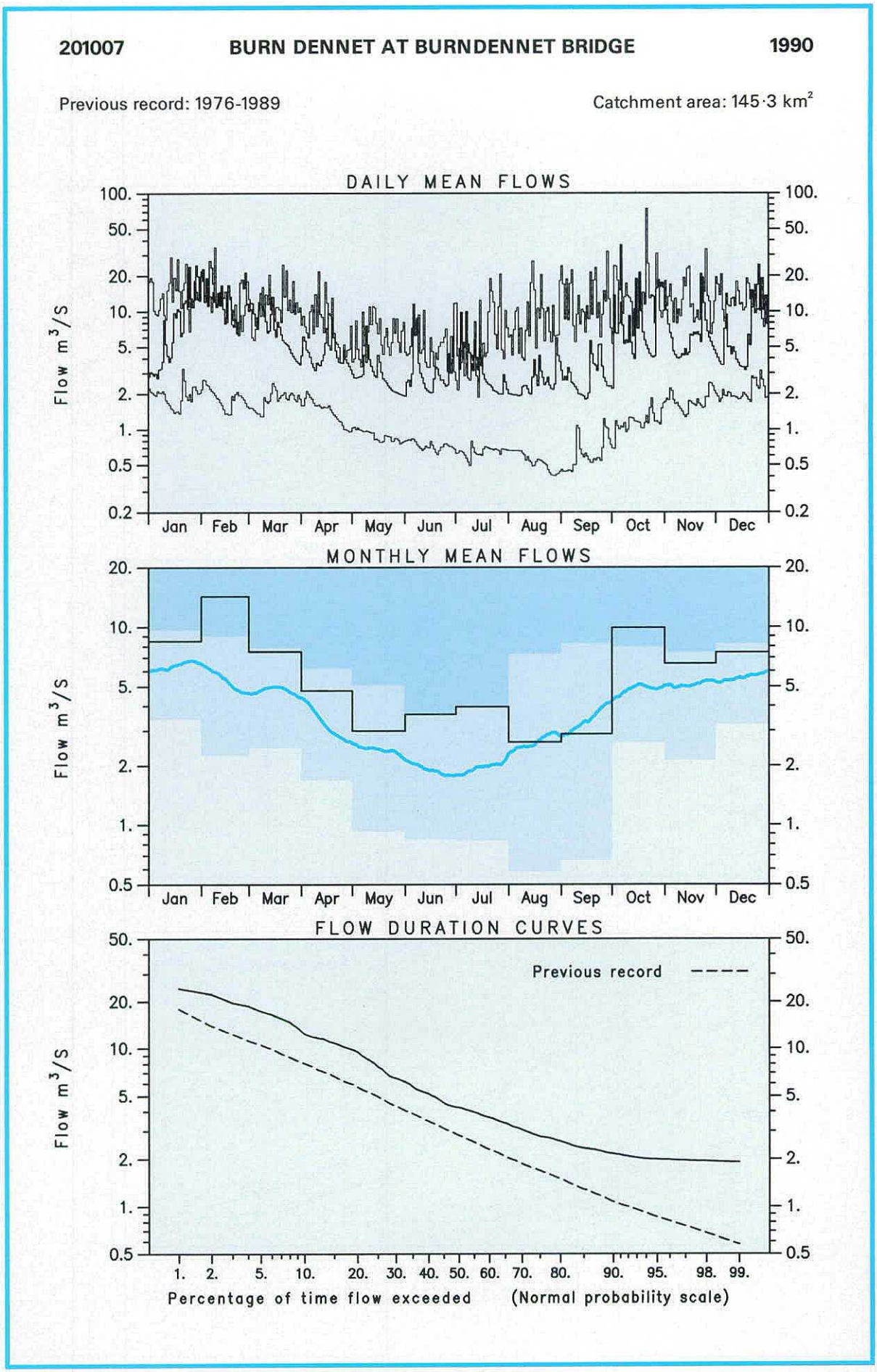

Figure 6(d). River flow patterns: Burn Dennet at Burndennet Bridge.

Each of the hydrographs for the British catchments exhibit similar dominant features: high flows early in the year (especially in February) followed by remarkably steep and sustained recessions which by the late spring resulted in notably low flows. The runoff transformation is well illustrated on the Usk where the mean flow for February was the highest on record (for any month); three months later the May runoff was equivalent to the lowest in a 34-year record. Although in Northern Ireland flows over the summer half-year were not especially depressed, throughout much of southern Britain runoff rates remained depressed into the autumn. The brisk upturn in flow rates identifiable on the Tay, Burn Dennet and Usk in October typified western and northern catchments. Recoveries in the lowlands were very much more sluggish. Generally recessions continued in most eastern rivers, particularly those supported principally by groundwater, through into early winter; a much belated seasonal recovery gathered momentum in December.

The flow duration curves illustrated on Figure 6 allow the proportion of the time that river flows fell below a given threshold to be identified. In 1990, for rivers throughout most of the UK, the flow duration curves were generally steeper than average and low flows (those exceeded for 95 per cent of the time) were below average in most catchments in eastern and southern Britain. The 1990 flow duration curve for the Burn Dennet - which has a record length typical of gauging stations in Northern Ireland - plots well above the corresponding period of record trace throughout the entire flow range. This provides a pointed contrast with many catchments in eastern England where sustained low flows were maintained through 1990 (see page 34).

The daily and monthly hydrographs in Figure 6, together with the data presented in the river flow tables (pages 46 to 136), show that even where the flow records provide a long historical perspective, the spate conditions late in the winter and the low flows over the latter half of the year approached, or superseded, the period of record extremes. Whilst relatively few instantaneous peak flow records were surpassed, extensions in the range of daily and monthly flow rates were widespread and very many existing hydrometric records were superseded. Table 2 provides a summary of river flow and runoff records established in 1990 at primary gauging stations. New hydrometric records of one category or another were established in 1990 at around three-quarters of the gauging stations in Great Britain commissioned before 1980. Entries in Table 2 are therefore confined to monitoring sites having at least 20 years of sensibly continuous data on the Surface Water Archive. Stations appearing in the annual runoff section are listed in numerical order, the monthly, daily and peak flow sections are ordered chronologically. Where, as for instance immediately below a reservoir, a new record may be largely attributable to artificial influences on the flow regime the station is not featured. Reference should be made to the 1981-5 Hydrometric Register and Statistics volume (Hydrological data UK series - see page 192) for guidance regarding the degree to which flows in a particular catchment may be regarded as natural. As in 1989, new minimum annual and monthly minimum runoff totals are very common but a more compelling indicator of the very unusual conditions in 1990 is provided by the presence of a few monitoring sites in both the high and low flow classifications (see page 32). A number of entries in Table 2 may be subject to revision as stage-discharge relations are reviewed in the light of recent current meter gaugings.

TABLE 2 RIVER FLOW AND RUNOFF RECORDS ESTABLISHED IN 1990

Station Number	River	Station Name	First Year of Record	New Record (mm)	Pre-1990 Record (mm)	Year
Highest Annual Runoffs						
4001	Conon	Moy Bridge	1947	2542	2072	1989
7001	Findhorn	Shenachie	1960	1448	1323	1982
7002	Findhorn	Forres	1970	1034	1028	1970
8002	Spey	Kinrara	1951	1082	845	1954
8005	Spey	Boat of Garten	1951	1059	947	1954
8007	Spey	Invertruim	1952	876	633	1954
8008	Tromie	Tromie Bridge	1952	1045	828	1961
8009	Dulnain	Balnaan Bridge	1952	910	881	1953
8010	Spey	Grantown	1953	934	838	1954
15003	Tay	Caputh	1947	1850	1814	1948
15006	Tay	Ballathie	1952	1479	1430	1988
15007	Tay	Pitnacree	1957	2147	1913	1986
17001	Carron	Headswood	1969	1188	1180	1985
18001	Allan Water	Kinbuck	1957	1247	1215	1988
18002	Devon	Glenochil	1959	943	942	1982
18003	Teith	Bridge of Teith	1957	1992	1895	1986
19004	North Esk	Dalmore Weir	1960	760	728	1979
21003	Tweed	Peebles	1959	954	852	1986
21005	Tweed	Lyne Ford	1961	1109	979	1986
21006	Tweed	Boleside	1961	986	932	1982
21014	Tweed	Kingledores	1961	1375	1232	1986
21018	Lyne Water	Lyne Station	1968	735	667	1985
21019	Manor Water	Cademuir	1968	1072	1029	1982

Station Number	River	Station Name	First Year of Record	New Record (mm)	Pre-1990 Record (mm)	Year
Highest Annual Runoffs (Continued)						
79003	Nith	Hall Bridge	1959	1599	1459	1982
83003	Ayr	Catrine	1970	1463	1124	1981
84003	Clyde	Hazelbank	1956	1144	1030	1982
84005	Clyde	Blairston	1958	1088	981	1986
84007	South Calder Water	Forgewood	1965	864	857	1979
84008	Rotten Calder Water	Redlees	1966	1384	1226	1986
84011	Gryfe	Craigend	1963	2392	2287	1986
84013	Clyde	Daldowie	1963	1109	955	1986
84014	Avon Water	Fairholm	1964	1226	1189	1982
84018	Clyde	Tulliford Mill	1969	1147	1110	1986
84019	North Calder Water	Calderpark	1963	848	730	1979
86001	Little Eachaig	Dalinlongart	1968	2205	2171	1986
94001	Ewe	Poolewe	1970	2861	2542	1983
Lowest Annual Runoffs						
26002	Hull	Hempholme Lock	1961	83	87	1989
26003	Foston Beck	Foston Mill	1959	78	85	1973
30003	Bain	Fulsby Lock	1962	76	77	1976
30004	Partney Lymn	Partney Mill	1962	128	150	1976
33006	Wissey	Northwold	1956	116	128	1989
33007	Nar	Marham	1953	117	144	1989
34004	Wensum	Costessey Mill	1960	135	141	1973
34012	Burn	Burnham Overy	1966	44	53	1973

Station Number	River	Station Name	First Year of Record	New Record (mm)	Month	Pre-1990 Record (mm)	Month/ Year
Highest Monthly Runoffs							
85002	Endrick Water	Gaidrew	1963	277	JAN	268	JAN 1975
8008	Tromie	Tromie Bridge	1952	301	FEB	234	DEC 1954
8009	Dulnain	Balnaan Bridge	1952	202	FEB	195	DEC 1966
15003	Tay	Caputh	1947	422	FEB	358	JAN 1974
15006	Tay	Ballathie	1952	349	FEB	301	JAN 1974
15013	Almond	Almondbank	1955	324	FEB	316	MAR 1963
16001	Earn	Kinkell Bridge	1948	386	FEB	298	JAN 1974
16003	Ruchill Water	Cultybraggan	1970	493	FEB	431	NOV 1984
18001	Allan Water	Kinbuck	1957	267	FEB	246	JAN 1983
18002	Devon	Gelnochil	1959	233	FEB	226	NOV 1984
18003	Teith	Bridge of Teith	1957	509	FEB	375	JAN 1974
21003	Tweed	Peebles	1959	239	FEB	192	NOV 1963
21005	Tweed	Lyne Ford	1961	284	FEB	241	JAN 1975
21006	Tweed	Boleside	1961	245	FEB	207	NOV 1963
21007	Ettrick Water	Lindean	1961	299	FEB	251	NOV 1963
21011	Yarrow Water	Philiphaugh	1963	270	FEB	246	JAN 1975
21012	Teviot	Hawick	1963	261	FEB	240	NOV 1963
21014	Tweed	Kingledores	1961	365	FEB	271	JAN 1975
21019	Manor Water	Cademuir	1968	292	FEB	212	NOV 1984
21021	Tweed	Sprouston	1969	182	FEB	156	JAN 1975
23006	South Tyne	Featherstone	1966	255	FEB	252	OCT 1967
39007	Blackwater	Swallowfield	1952	75	FEB	59	NOV 1960
39015	Whitewater	Lodge Farm	1963	56	FEB	52	FEB 1975
39016	Kennet	Theale	1961	64	FEB	59	JAN 1969
39020	Coln	Bibury	1963	100	FEB	87	FEB 1988
39022	Loddon	Sheepbridge	1965	109	FEB	94	NOV 1974
39025	Enborne	Brimpton	1967	95	FEB	89	NOV 1974
39028	Dun	Hungerford	1968	50	FEB	45	FEB 1974
39035	Churn	Cerney Wick	1969	77	FEB	71	FEB 1988
41011	Rother	Iping Mill	1966	146	FEB	122	JAN 1986
42008	Cheriton Stream	Sewards Bridge	1970	50	FEB	49	FEB 1988
43003	Avon	East Mills	1963	84	FEB	69	MAR 1977
43005	Avon	Amesbury	1965	120	FEB	73	FEB 1988
43006	Nadder	Wilton Park	1966	135	FEB	90	FEB 1974
43008	Wylye	South Newton	1967	102	FEB	72	FEB 1974
43009	Stour	Hammoon	1968	186	FEB	139	DEC 1989
44001	Frome	East Stoke Total	1961	115	FEB	103	FEB 1966
44002	Piddle	Baggs Mill	1963	116	FEB	97	FEB 1988
44004	Frome	Dorchester Total	1969	132	FEB	104	FEB 1988
44006	Sydling Water	Sydling St Nicholas	1969	117	FEB	97	FEB 1974
45004	Axe	Whitford	1964	157	FEB	153	OCT 1976
46002	Teign	Preston	1956	306	FEB	293	OCT 1960
46003	Dart	Austins Bridge	1958	429	FEB	397	JAN 1974

Station Number	River	Station Name	First Year of Record	New Record (mm)	Month	Pre-1990 Record (mm)	Month/ Year
Highest Monthly Runoffs (continued)							
46005	East Dart	Bellever	1964	574	FEB	477	JAN 1974
47009	Tiddy	Tideford	1969	237	FEB	219	FEB 1974
48005	Kenwyn	Truro	1968	207	FEB	195	FEB 1974
48007	Kennall	Ponsanooth	1968	185	FEB	163	FEB 1977
49001	Camel	Denby	1964	269	FEB	245	DEC 1965
49002	Hayle	St. Erth	1957	209	FEB	169	FEB 1974
49004	Gannel	Gwills	1969	164	FEB	161	FEB 1974
52003	Halse Water	Bishops Hull	1961	125	FEB	115	FEB 1977
52004	Isle	Ashford Mill	1962	160	FEB	153	JAN 1974
52007	Parrett	Chiselborough	1966	198	FEB	176	JAN 1984
52010	Brue	Lovington	1964	125	FEB	123	FEB 1977
53002	Semington Brook	Semington	1953	119	FEB	91	FEB 1977
53018	Avon	Bathford	1969	105	FEB	101	FEB 1977
55012	Irfon	Cilmery	1966	370	FEB	369	JAN 1984
55014	Lugg	Byton	1966	197	FEB	184	MAR 1981
55025	Llynfi	Three Cocks	1970	296	FEB	178	JAN 1974
55029	Monnow	Grosmont	1948	192	FEB	183	NOV 1960
56005	Lwyd	Ponthir	1966	338	FEB	314	OCT 1976
73005	Kent	Sedgewick	1968	317	FEB	297	DEC 1986
75003	Derwent	Ouse Bridge	1968	406	FEB	367	NOV 1986
76002	Eden	Warwick Bridge	1966	253	FEB	243	OCT 1967
76003	Eamont	Udford	1961	432	FEB	422	OCT 1967
76005	Eden	Temple Sowerby	1964	246	FEB	243	OCT 1967
76015	Eamont	Pooley Bridge	1970	533	FEB	445	JAN 1975
78003	Annan	Brydekirk	1967	277	FEB	252	DEC 1986
79002	Nith	Friars Carse	1957	302	FEB	298	JAN 1974
84003	Clyde	Hazelbank	1956	255	FEB	209	JAN 1975
84004	Clyde	Sills	1957	245	FEB	209	JAN 1975
84005	Clyde	Blairston	1958	227	FEB	211	JAN 1975
84007	South Calder Water	Forgewood	1965	151	FEB	138	DEC 1986
84013	Clyde	Daldowie	1963	224	FEB	199	SEP 1985
84018	Clyde	Tulliford Mill	1969	250	FEB	242	DEC 1986
84019	North Calder Water	Calder Park	1963	159	FEB	133	NOV 1982
4001	Conon	Moy Bridge	1947	533	MAR	460	DEC 1966
7001	Findhorn	Shenachie	1960	329	MAR	269	JAN 1983
8002	Spey	Kinrara	1951	294	MAR	219	DEC 1954
8005	Spey	Boat of Garten	1951	274	MAR	215	DEC 1954
8007	Spey	Invertruim	1952	285	MAR	167	DEC 1954
8010	Spey	Grantown	1953	224	MAR	187	DEC 1954
15007	Tay	Pitnacree	1957	502	MAR	404	JAN 1974
15011	Lyon	Comrie Bridge	1958	460	MAR	301	JAN 1974
84017	Black Cart Water	Milliken Park	1967	380	MAR	355	SEP 1985
85001	Leven	Linnbrane	1963	493	MAR	429	DEC 1986
85003	Falloch	Glen Falloch	1970	714	MAR	655	JAN 1974
86002	Eachaig	Eckford	1968	655	MAR	523	DEC 1986
94001	Ewe	Poolewe	1970	574	MAR	497	DEC 1974
Lowest Monthly Runoffs							
34006	Waveney	Needham Mill	1963	1.8	JUL	1.8	SEP 1964
33007	Nar	Marham	1953	4.1	AUG	4.7	AUG 1976
33029	Stringside	White Bridge	1965	0.4	AUG	0.9	AUG 1989
34001	Yare	Colney	1959	2.2	AUG	2.2	JUL 1976
34004	Wensum	Costessey Mill	1960	4.0	AUG	4.0	JUL 1976
35003	Alde	Farnham	1961	1.1	AUG	1.3	JUL 1976
35008	Gipping	Stowmarket	1964	1.4	AUG	1.4	SEP 1964
40013	Darent	Otford	1969	2.5	AUG	2.6	AUG 1989
56002	Ebbw	Rhiwderyn	1957	13.0	AUG	15.6	JUL 1962
27023	Dearne	Barnsley Weir	1960	2.8	SEP	4.6	AUG 1976
33006	Wissey	Northwold	1956	2.2	SEP	3.1	AUG 1976
33048	Larling Brook	Stonebridge	1969	0.5	SEP	0.8	AUG 1976
34012	Burn	Burnham Overy	1966	2.4	SEP	2.6	AUG 1976
36009	Brett	Cockfield	1968	0.0	SEP	0.1	AUG 1976
40011	Great Stour	Horton	1964	6.3	SEP	6.8	AUG 1976
41017	Combehaven	Crowhurst	1969	0.6	SEP	0.9	AUG 1989
41020	Bevern Stream	Clappers Bridge	1969	0.9	SEP	1.6	AUG 1976
48007	Kennall	Ponsanooth	1968	3.6	SEP	4.2	SEP 1989
55013	Arrow	Titley Mill	1966	2.8	SEP	3.3	AUG 1989
55028	Frome	Bishops Frome	1971	1.9	SEP	2.1	AUG 1976
26002	Hull	Hempholme Lock	1961	2.5	NOV	3.2	AUG 1976
26003	Foston Beck	Foston Mill	1959	3.3	NOV	4.6	SEP 1973
33032	Heacham	Heacham	1965	1.4	DEC	1.4	SEP 1976

Station Number	River	Station Name	First Year of Record	New Record (m^3s^{-1})	Day/ Month	Pre-1990 Record (m^3s^{-1})	Day/Month/ Year
Highest Instantaneous Flows							
55025	Llynfi	Three Cocks	1970	167	27 JAN	160	27 DEC 79
54012	Tern	Walcot	1960	60.0	28 JAN	55.8	31 DEC 81
39015	Whitewater	Lodge Farm	1963	2.24	03 FEB	1.65	21 NOV 74
8008	Tromie	Tromie Bridge	1952	134	04 FEB	117	28 SEP 61
15003	Tay	Caputh	1951	1750	04 FEB	1339	05 NOV 51
15007	Tay	Pitnacree	1957	669	04 FEB	557	18 JAN 74
16001	Earn	Kinkell Bridge	1951	280	04 FEB	255	09 JAN 71
43005	Avon	Amesbury	1965	28.5	04 FEB	17.3	16 MAR 82
76001	Haweswater Beck	Burnbanks	1953	31.4	04 FEB	30.8	09 MAR 89
15006	Tay	Ballathie	1952	1750	05 FEB	1570	30 JAN 74
18003	Teith	Bridge of Teith	1963	362	05 FEB	304	05 JAN 83
8010	Spey	Grantown	1953	528	06 FEB	461	19 DEC 66
54020	Perry	Yeaton	1963	17.7	07 FEB	14.2	10 JAN 86
55012	Irfon	Cilmery	1966	373	07 FEB	300	18 OCT 87
56002	Ebbw	Rhiwderyn	1957	250	07 FEB	247	27 DEC 79
56005	Lwyd	Ponthir	1966	129	07 FEB	100	27 DEC 79
39020	Coln	Bibury	1963	5.48	11 FEB	5.00	22 DEC 65
72004	Lune	Caton	1968	874	19 FEB	854	02 JAN 82
85001	Leven	Linnbrane	1963	216	11 MAR	150	31 JAN 74
86002	Eachaig	Eckford	1968	113	11 MAR	112	21 SEP 89
19001	Almond	Craigiehall	1957	220	06 OCT	200	03 NOV 84
19004	North Esk	Dalmore Weir	1960	52.1	06 OCT	37.7	03 NOV 84
19005	Almond	Almondell	1962	215	06 OCT	166	30 OCT 77
19006	Water of Leith	Murrayfield	1963	87.2	06 OCT	84.9	03 NOV 84
21013	Gala Water	Galashiels	1964	128	06 OCT	75.8	21 SEP 85
21015	Leader Water	Earlston	1966	116	06 OCT	94.8	01 NOV 67
21018	Lyne Water	Lyne Station	1968	73.8	06 OCT	58.7	21 SEP 85
84007	South Calder Wtr	Foregewood	1965	54.4	07 OCT	52.1	13 AUG 66
84019	North Calder Wtr	Calderpark	1963	91.2	07 OCT	70.8	02 OCT 81
9003	Isla	Grange	1969	94.1	28 OCT	73.4	27 MAR 87
Highest Daily Mean Flows							
54029	Teme	Knightsford Bridge	1970	220	28 JAN	210	28 DEC 79
38014	Salmon Brook	Edmonton	1956	3.71	03 FEB	3.49	30 MAY 79
16003	Ruchill Water	Cultybraggan	1970	104	04 FEB	89.0	26 SEP 81
21019	Manor Water	Cademuir	1968	18.2	04 FEB	16.0	03 JAN 82
8007	Spey	Invertruim	1952	194	05 FEB	189	17 DEC 66
44004	Frome	Dorchester Total	1969	16.7	07 FEB	13.5	15 FEB 74
39035	Churn	Cerney Wick	1969	4.60	11 FEB	4.53	04 FEB 88
19011	North Esk	Dalkeith Palace	1963	56.2	06 OCT	47.4	21 SEP 85
84008	Rotten Calder Wtr	Redlees	1966	29.9	06 OCT	28.2	07 OCT 77
Lowest Daily Mean Flows							
34007	Dove	Oakley Park	1966	0.099	29 JUL	0.110	12 SEP 73
34006	Waveney	Needham Mill	1963	0.165	30 JUL	0.189	23 AUG 73
25004	Skerne	South Park	1956	0.196	02 AUG	0.238	05 AUG 76
27023	Dearne	Barnsley Weir	1960	0.083	03 AUG	0.133	17 SEP 61
68004	Wistaston Brook	Marshfield Bridge	1959	0.084	06 AUG	0.127	14 SEP 89
48007	Kennall	Ponsanooth	1968	0.025	10 AUG	0.029	30 SEP 89
28040	Trent	Stoke on Trent	1968	0.084	11 AUG	0.090	03 OCT 89
37001	Roding	Redbridge	1950	0.079	13 AUG	0.084	29 AUG 53
35003	Alde	Farnham	1961	0.020	14 AUG	0.022	07 JUL 76
34010	Waveney	Billingford Bridge	1968	0.011	28 AUG	0.017	12 JUL 76
40013	Darent	Otford	1969	0.053	28 AUG	0.062	06 SEP 76
33029	Stringside	White Bridge	1965	0.008	06 SEP	0.019	25 AUG 76
34004	Wensum	Costessey Mill	1960	0.482	10 SEP	0.514	11 JUL 76
21016	Eye Water	Eyemouth Mill	1967	0.061	15 SEP	0.080	25 AUG 76
25019	Leven	Easby	1971	0.033	16 SEP	0.034	25 AUG 76
40011	Great Stour	Horton	1964	0.658	19 SEP	0.725	27 AUG 76
33048	Larling Brook	Stonebridge	1969	0.003	28 SEP	0.004	18 AUG 76
41020	Bevern Stream	Clappers Bridge	1969	0.005	28 SEP	0.010	09 SEP 76
55013	Arrow	Titley Mill	1966	0.090	28 SEP	0.127	26 AUG 76
56002	Ebbw	Rhiwderyn	1957	0.732	28 SEP	0.991	08 SEP 61
40004	Rother	Udiam	1962	0.069	14 OCT	0.083	14 OCT 89
26003	Foston Beck	Foston Mill	1959	0.064	03 DEC	0.079	13 SEP 73

Note: Highest daily mean flows are featured only where no corresponding highest instantaneous flow was recorded.
Only the highest or lowest value is featured where a record was repeatedly superseded.
In some instances, rounding causes new record runoff totals to appear equal to the pre-1990 value. As will most estreme flows, entries in Table 2 may be subject to review.

Groundwater

After a relatively quiescent period from the early 1980s when groundwater levels in most major aquifers remained relatively close to, but normally above, the average patterns of groundwater recharge entered an erratic phase in late-1987. Heavy and sustained recharge over the 1987/88 winter increased groundwater levels in most areas to their highest for at least a decade prior to the onset of the 1988 recession. Subsequently, the regular cycle of groundwater level decline and recovery departed greatly from the normal seasonal pattern. Exceptionally prolonged declines in water-tables, interrupted by the very modest infiltration over the 1988/89 winter, produced notably low groundwater levels by late-1989.

The depressed nature of groundwater resources around the beginning of 1990 is clearly evident on the groundwater hydrographs illustrated on pages 168 to 171. In western and some southern areas groundwater level recoveries gathered momentum in January but in the eastern Chalk, water-table response was modest and patchy. Very heavy February rainfall – on saturated soils – then generated dramatic recoveries in all but the eastern lowlands such that by late winter groundwater levels had climbed to close to, or above, the seasonal average. In most areas, the rapid improvement in resources was followed by extremely steep falls in groundwater levels. Little effective infiltration occurred after mid-February and groundwater recessions were generally well established by late-March; in a normal year further increases in level may be expected through much of the spring. By April the rapidly increasing SMDs made it unlikely that any significant further recharge would occur.

Estimates of total recharge over the 1989/90 winter based on the cumulative rise of groundwater levels are presented in the Register of Selected Groundwater Observation Wells (pages 172 to 174). In the eastern lowlands recharge was often considerably below average for the second year in succession; 24-month recharge totals were especially low in Humberside and parts of East Anglia. The paucity of recharge together with the extremely early cessation of infiltration in 1990 provided the backcloth for the very depressed levels later in the year.

The winter recharge estimates for observation boreholes in the Chalk were used in the preparation of Figure 7. The map provides a guide to 1989/90 groundwater replenishment – expressed as a percentage of the mean annual replenishment given in Monkhouse and Richards[1]. The recharge to the major aquifers of England and Wales, broken down according to the major administrative divisions in the water industry, was also estimated – the results are presented in Table 3 (page 20). These results confirm that spatial variations in recharge amounts were unusually large but a marked decline in percentage terms can be identified in an easterly direction. In broad terms recharge was most meagre – both in absolute terms and relative to the average – in those eastern aquifer units where even in an average year recharge is modest.

The outlook, in the late spring of 1990, for groundwater resources was especially fragile in those areas where limited recharge over the 1989/90 winter followed meagre replenishment over the preceding winter. Estimates of percentage recharge for 1988/89 and 1989/90 are presented below for a selection of observation boreholes in the Chalk and Upper Greensand of eastern England; details of borehole locations are given in the Register of Observation Boreholes. An explanation of the method used to assess the percentage recharge is given on page 167.

Borehole	Measuring Authority	% Recharge 1988/89	% Recharge 1989/90
Dalton Holme	NRA-Y	40	59
Hunmanby Hall	NRA-Y	<10	33
Little Brocklesby	NRA-A	35	59
Off Farm	NRA-A	17	85
Washpit Farm	NRA-A	<10	76
The Hall, Brinton	NRA-A	14	86
The Spinney, Cotessey	NRA-A	20	75
Fairfields	NRA-A	26	17
Dial Farm	NRA-A	59	30
Grange Farm	NRA-A	65	17
The Holt	NRA-T	29	117
Stonor Park	NRA-T	32	148
Little Bucket	NRA-S	39	88
Alland Grange	NRA-S	31	93
Little Petts	NRA-S	<10	17
Old Rectory, Ryecombe	NRA-S	14	187

Even where the 1989/90 replenishment was relatively close to, or even above, the average it was often insufficient to restore levels to within the normal range – a consequence of the exceptionally low base levels from which the recovery needed to be generated.

Following the initial sharp fall in level after the cessation of recharge in the early spring of 1990, groundwater levels continued to decline steeply through May and June and by mid-summer were substantially below the seasonal average in almost

all areas – a notable contrast with the resources outlook only five months previously. Apart from some very localised recharge – generally via fissure systems below shallow soils – in southern England following heavy rainfall during August recessions continued unabated. Entering the autumn, groundwater levels generally remained considerably above those registered at the same time in 1976 in southern and central England. However, in parts of eastern Yorkshire (and Humberside), East Anglia, the lower Thames Valley and Kent, levels were approaching the lowest on record.

In an average year groundwater level recoveries gain momentum from late-September (somewhat later in eastern and southern areas) but in 1990 levels continued to fall through the autumn, although some upturns were registered in western aquifers in October – see Figure 18 (page 168). By the end of October levels at, for instance, the Llanfair DC site (in the Permo-Triassic sandstones), Dalton Holme, Fairfields and Ashton Farm (in the Chalk and Upper Greensand) and at Ampney Crucis (Jurassic Limestone) had fallen below the pre-1990 monthly minima; for the latter two boreholes, new absolute minima were registered. A clear moderation in the groundwater decline was widely evident in November but a number of further absolute minima were recorded and water-tables continued a gradual fall into December in eastern areas. With a major proportion of the December precipitation concentrated into the latter half of the month, the associated surge of infiltration was often not evident until the year-end or later. Many 1990 minimum levels were established in December and over wide areas they were close to, or superseded, the previous minimum on record (see page 36). At year end, levels in the Chalk were at their lowest on record, for the winter, at a majority of the index boreholes for which groundwater hydrographs are featured on Figure 18 (pages 168 to 171).

The majority of observation boreholes for which contemporary data are held on the Groundwater Archive monitor the natural variation in groundwater levels. However, in parts of the United Kingdom levels have been influenced, sometimes over long periods, by pumping for water supply or other purposes which exceeds the natural rate of replenishment. As a consequence the regional water-table may become substantially depressed. For instance, the levels at a number of observation boreholes in the Permo-Triassic sandstones of the

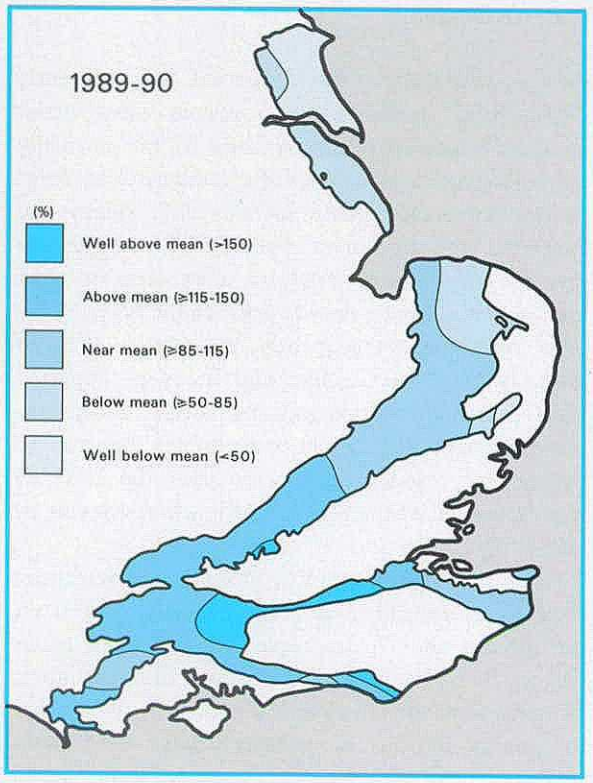

Figure 7. Generalised percentage of the mean annual replenishment to the main outcrops of the Chalk and Upper Greensand aquifer for 1989/90.

TABLE 3. ANNUAL REPLENISHMENT TO THE MORE IMPORTANT AQUIFERS IN ENGLAND AND WALES FOR THE YEAR 1989/90.

NRA Region	Mean annual replenishment	1989–90 replenishment
Chalk and Upper Greensand aquifer		
Anglian	953	749 (79)
Southern	1231	1606 (130)
South West	202	259 (128)
Thames	976	1351 (138)
Wessex	947	1102 (116)
Yorkshire	322	144 (45)
Total	4631	5211 (112)
Lincolnshire Limestone aquifer		
Anglian	86	89 (104)
Permo-Triassic sandstones aquifer		
Northumbria	11	6 (52)
North West	331	386 (116)
Severn-Trent	528	539 (102)
South West	205	255 (124)
Welsh	27	28 (102)
Wessex	39	54 (139)
Yorkshire	302	262 (87)
Total	1443	1530 (106)
Magnesian Limestone aquifer		
Northumbria	80	37 (46)
Severn-Trent	40	39 (97)
Yorkshire	127	8 (69)
Total	247	164 (66)

(Units in $m^3 10^6$. Percentages of the annual mean in parentheses.)

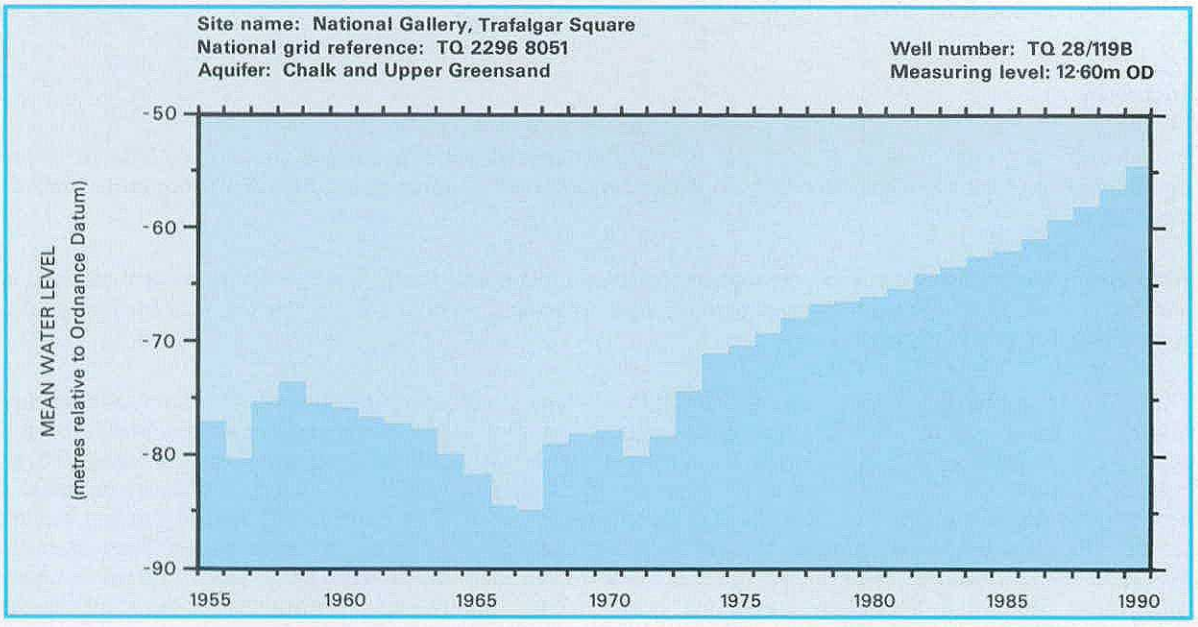

Figure 8. Annual mean groundwater levels at Trafalgar Square.

Note: Groundwater levels for the Trafalgar Square borehole are available on the Groundwater Archive (see page 175) back to 1845, when the level was −21.6m OD, but regular monthly recording began only in 1951.

Midlands are indicative of a significant regional decline. By contrast those at Rushyford now stand some 10 metres higher than a decade ago (due partly to a rundown of the coal industry and the consequent cessation of continuous pumping for mine dewatering). On a larger scale, groundwater levels in the confined Chalk and Upper Greensand aquifer below London have risen substantially over the last twenty-five years. Annual mean levels in the national Gallery well (Trafalgar Square) testify to a 30 metre rise since the mid-1960s – see Figure 8. This is principally a consequence of abstractors increasingly switching to surface water supplies drawn from reservoirs in the Thames and Lee valleys. The decreased rate of groundwater abstraction initially stabilised the water-table, which had been declining steadily over the preceding 150 years in response to London's water demands, and subsequently levels have risen at the rate of approximately one metre per year. More moderate increases have been reported for other conurbations in Britain[2]; in some cases leakage from water mains is considered to be an exacerbating factor. The implications of rising groundwater levels extend beyond the potential improvement in resources that the rise represents. Groundwater quality may be adversely affected as levels more closely approach the surface and a number of geotechnical problems may result, for instance the flooding of tunnels and foundations.

References

1. Monkhouse, R.A. and Richards, H.J. 1983. Groundwater resources of the United Kingdom. Commission of the European Communities, pub. Th. Schaeffer druckerei GmbH, Hanover. 252 pages.
2. Brassington, F.C. 1990. Rising groundwater levels in the United Kingdom. Proc. Instn. Civ. Engrs. Part 1, 88, Dec., 1037–1057.

1990 Hydrological Diary

January

A wet and very mild month. A sequence of vigorous frontal systems crossed the British Isles diverting hydrological interest from the declining drought to widespread flooding which affected many areas towards month-end.

10th: Heavy rainfall was recorded throughout parts of central and north Wales - 67 mm was registered at Moch Cynnedd. Runoff rates responded briskly; the daily mean flow on the River Dee (at New Inn) surpassed any recorded over the previous year.

27th-31st: An especially violent storm on the 25th - which caused very substantial structural damage and resulted in significant loss of life - heralded a sequence of very active low pressure systems. Sustained and heavy precipitation on the 27th, in a broad swathe from Cornwall to northern England, instigated an extended period of high flows in many catchments. In Shropshire, the River Tern (at Walcot) recorded a new highest instantaneous flow in a 31-year record, on the 28th. The Knightsford Bridge gauging station on the River Teme also recorded its highest daily mean in a 20-year series on the same day. Subsequently, persistent rainfall and, in some areas, thundery conditions, maintained river flows close to bankfull over wide areas. Extensive floodplain inundation began around month-end; flooding was significant in the Severn and Thames basins.

February

A month of very boisterous weather conditions. Exceptionally wet with sustained flooding characterising many regions; Scotland was severely affected. February 1990 was the ninth wettest month in the 132-year Great Britain rainfall series and, in Scotland, the precipitation total for the month is unmatched in the twentieth century. Many new maximum February runoff totals were established throughout the United Kingdom.

1st-4th: Severe gales brought sustained precipitation to most regions. Heavy rainfall on the 3rd exacerbated flood conditions in southern Britain. In Scotland, an 84 mm rainfall total was reported on the 4th from Black Mount in Strathclyde. On higher ground the rain turned to snow which, following further rainfall and a sharp temperature rise, contributed to extensive flooding in Scotland (see page 26). A significant proportion of rivers draining from the Highlands eclipsed their previous peak flow rates on the 4th. The River Tromie (a tributary of the Spey) recorded a new highest instantaneous flow of 133.5 m^3s^{-1} in a 39-year record; the return period of the flood was estimated at 65 years.

6th-7th: A further vigorous low pressure system produced notable rainfall totals throughout much of England and Wales - Cilfyndd (Mid-Glamorgan) reported 108 mm over the two days. Discharge rates in rivers often already close to bankfull increased further. Flows on the 7th were exceptional in South Wales - peak flows on the Ebbw, Lwyd and Irfon each surpassed the previous highest on record. Overbank flows characterised many catchments in northern and central Scotland and throughout much of southern Britain.

19th-22nd: Severe gales over Wales and northern Britain produced persistent precipitation with some notable daily totals. In North Wales 83 mm was recorded on the 19th at Betws-y-coed and more than 100 mm fell over the 19th/20th in Cumbria. Rainfall was particularly heavy in the Eden catchment where flooding was reported in Appleby. In north Lancashire, the Garstang flood storage basin was brought into use to alleviate flooding on the River Wyre.

March

Another very mild month, generally notably dry but north-west Scotland remained exceptionally wet. Fort Augustus registered its highest monthly rainfall total in a 100-year record. Rivers remained in spate from February and new maximum monthly runoff totals were established for a number of rivers draining from the Scottish Highlands (examples include the Conon, Spey, Ewe and Leven). Runoff for the Tromie catchment (see above) exceeded 300 mm for the second successive month - comfortably greater than any pre-1990 monthly total. By contrast a few locations in south-eastern England recorded barely two millimetres of rain over the entire month; in the English lowlands rivers were in steep recession and increasing soil moisture deficits served to bring a very early end to the aquifer recharge season.

April

Generally a relatively dry and exceptionally sunny month; temperatures were above average apart from a cold interlude, with widespread frosts, in the second week. In the eastern lowlands a very dry spell, beginning in late February, which in some catchments extended over 10–12 weeks, reduced flow rates to well below the seasonal mean. Away from north-western Britain, many gauging stations eclipsed their previous lowest April runoff totals - examples include St Mary's Bridge on the Derbyshire Derwent which registered a new minimum April mean flow in a record from 1936. The transformation in hydrological conditions from mid-February was exemplified on the River Teign (Devon): April flows were the lowest in a 35-year record at the Preston gauging station; in February a new maximum runoff for any month had been established.

May

May provided a suitable climax to an exceptionally dry and notably warm spring. Evaporation rates were very high and soil moisture deficits increased smartly with rainfall in parts of central and southern England restricted to a few light showers. The May rainfall total - 2.1 mm - for the Institute of Hydrology's weather station was the lowest for any month in a 30-year record. For England and Wales as a whole, May 1990 was among the driest half-dozen months this century. The prolonged flow recessions in southern Britain continued and, in the east especially, notably low runoff totals were recorded. New May runoff minima were established on, for example, the Rivers Trent, Yorkshire Derwent and Turkey Brook (in the Lee catchment). Many other lowland rivers experienced their lowest May flows since 1976. Little infiltration had occurred since late-February and the decline in groundwater levels over the spring period has no recent parallel in parts of the Chalk aquifer.

June

In contrast to much of 1990, June was cool, cloudy and, in most areas, quite wet. At the Royal Observatory, Edinburgh, the June rainfall total of 127 mm was the highest since 1928. To the south, rainfall was less abundant but generally sufficient to arrest the steep decline in river flows. Infiltration rates remained minimal however, and soil moisture deficits at month end were 50 mm above average over wide areas.

6th-7th: A sequence of vigorous frontal systems, with associated thundery activity, brought heavy rainfall to parts of Scotland - totals exceeded 50 mm over a considerable area. The peak flow on the River Findhorn (at Forres), on the 6th, surpassed the previous June maximum by almost 100 m^3s^{-1}. At Carrbridge, near Inverness, a railway embankment was washed away by floodwater from a swollen burn, interrupting the main rail link to northern Scotland; erosion damage was widespread in north-east Scotland.

July

Following a cool and cloudy start the sunny, warm and dry conditions which had predominated from the early spring became re-established. River flows, increased briskly in some western and northern catchments early in the month but thereafter began a further sustained decline. By month-end some exceptionally low runoff rates were recorded for rivers draining largely impervious catchments. New minimum daily flow rates were established on, for instance, the Eye Water (Borders region) where flows continued to decline into the autumn. In the River Skerne (county Durham) flows remained below the previous minimum for 16 successive days. Existing minimum daily mean flows were also superseded in less responsive catchments e.g. the River Waveney in Suffolk.

August

A dry, warm month with remarkably high temperatures recorded in the first week; the latter half of the month was more unsettled with some thundery outbreaks. Potential evaporation losses were substantially above average and PE totals for the first eight months of the year were generally at record, or near record, levels. Existing minimum daily mean flows were superseded in a number of rivers in eastern and southern England including the rivers Leven (North Yorkshire), Idle (Nottinghamshire) and Leach (Gloucestershire). Over wide areas flow rates fell to their lowest since 1976 and groundwater levels were notably depressed in eastern England.

24th: Localised thunderstorms in Northumbria resulted in a number of intense, if spatially restricted, rainfall episodes. At Brignall an experienced observer reported a fall of 87 mm in an hour and 40 minutes (the associated nominal return period exceeds 1000 years); 70 mm totals in periods of about 3 hours, were recorded elsewhere.

September

Cool and windy conditions signalled the end of the hot, dry summer but rainfall was again below average apart from northern and western Scotland. The exceptionally dry lowland soils precluded any significant seasonal recovery in runoff and recharge rates. By mid-month further exceptionally low flows were recorded in southern Britain. On the 19th flows on the Great Stour, at Horton, fell below the previous minimum in a 27-year record and, to the west, the River Ebbw remained below the pre-1990 minimum for 26 days. In contrast, the River Carron, in the Highland region of Scotland, equalled its highest flow on record on the 18th.

October

A mild and wet month with considerable spatial variations in rainfall totals. River flows increased substantially in western and northern Britain but drought conditions continued throughout much of the lowlands. The Rother at Udiam registered a new minimum daily mean flow, in a 39-year record.

6th: A deepening Atlantic depression tracked across southern Scotland. The associated heavy rainfall produced daily totals approaching 100 mm in parts of the Southern Uplands. Edinburgh registered its wettest (63 mm) October day on record. Flow rates in rivers throughout central and southern Scotland increased rapidly. The White Cart Water registered its highest peak flow for 26 years and record instantaneous flow rates were established on the Tyne, Almond, Avon and Water of Leith; return periods of around 100 years were ascribed to these floods. Further south, the peak flow on the Gala Water (Borders region) exceeded the previous maximum by a wide margin (in a record from 1963). Minor floodplain inundation was widespread and localised flooding occurred in Edinburgh; flooding was more severe at Haddington where the River Tyne overtopped its banks.

17th-19th: Several intense rainfall events were associated with a complex low pressure system situated over southern Britain. In the Midlands, a fall of 71 mm in nine hours was measured at Tickhill (south of Doncaster) whilst at Fleckney (East Midlands) 55 mm fell in 5½ hours – return periods of over 100 years were ascribed to both events.

28th-29th: A complex depression tracking south-west to north-east brought sustained heavy rainfall to the Antrim mountains and thence to Scotland. Flooding occurred in Ballycastle when the River Tow burst its banks. In northern Scotland the peak flow on the River Isla (at Grange) surpassed its previous instantaneous maximum in a record from 1969; a large area of agricultural land in north-east Scotland was flooded and loss of livestock was considerable.

November

A further relatively dry month, despite an unsettled complexion to the weather, with above average temperatures. Although soils were generally wet by month-end throughout western and northern Britain, large soil moisture deficits continued to delay the seasonal recovery in river flows and groundwater levels in the English lowlands. The River Coln, in the Cotswolds, registered its lowest November runoff total in a 28-year record and river flows were generally depressed in much of central, southern and eastern England.

23rd: The passage of a deep Atlantic depression brought sustained frontal rainfall across parts of Northern Ireland. Falls of 154 mm and 125 mm were recorded at Trassey Slievenaman and Bryansford (County Down) respectively.

December

A cold, sunny month with precipitation totals close to the average in most regions. Early in the month, several gauging stations in the South-East (mostly with relatively short flow records) recorded their lowest daily mean flow on record; on the River Thames, daily mean flows were the lowest since 1947. Blizzard conditions in the second week caused widespread transport disruption. Subsequently, a rapid thaw and associated rainfall caused a brisk increase in river flows throughout much of Britain but the upturn was sluggish in the eastern lowlands. At year-end, groundwater levels were extremely depressed in the east.

1990 – A YEAR OF FLOODS AND DROUGHT

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In January 1989 the Department of the Environment requested that the Institute of Hydrology and the British Geological Survey jointly re-activate a national hydrological monitoring programme and provide monthly reports dealing with rainfall, river flows and groundwater levels. A principal objective of this programme is to identify the development of drought conditions and to assess regional variations in intensity.

Most of the hydrometric data featured in the monthly reports are furnished by the regional divisions of the National Rivers Authority (NRA) and the River Purification Boards (RPBs). Rainfall, evaporation and soil moisture information are provided by the Meteorological Office and, from the summer of 1990, reservoir contents data have been supplied by the Water Services PLCs. Much of the material presented in the following article have been assembled as part of the ongoing national monitoring programme; the article also draws on data and figures presented in other sections of the 1990 Yearbook. Some of the data – especially those relating to the extreme range of river flow – may be subject to future review.

Background

For Great Britain as a whole, the decade beginning in 1980 was the wettest on record. Generally, the temporal distribution of the rainfall was also beneficial from a hydrological point of view – precipitation totals tending to be considerably higher in the winter when evaporation losses are modest[1]. Although a notable spring/summer drought afflicted much of western and northern Britain in 1984, the concern for water resources generated by the extreme drought of 1975/76 was largely dissipated over the ensuing dozen years. For most of this period, and in most areas, river flows and groundwater levels were above, often well above, the seasonal mean and low flows in particular were significantly greater than those registered in the early and mid-1970s and the mid-1960s. However, in parts of eastern and southern Britain an extended period of rainfall deficiency, beginning as early as the spring of 1988, laid the foundation for several notable drought episodes. In some eastern regions these episodes merged into a remarkably sustained period of rainfall deficiency, elsewhere the drought conditions were punctuated by several very wet interludes.

The Winter of 1989/90

For the second successive year the limited autumn rainfall and exceptionally dry soil conditions combined to greatly delay the recovery of river flows and groundwater levels in the latter half of 1989. Severe drought conditions afflicted much of eastern and southern England at the beginning of December 1989[2]; the depressed water-tables throughout most major aquifers was a matter of particular water resources concern. Heavy and sustained rainfall from mid-December 1989 helped to change the complexion of the drought and the transformation continued into 1990[3]. Several damaging storms in late January 1990 heralded a remarkably wet February which concluded the wettest winter (December-February) on record for Great Britain, it was also one of the warmest. In all but a few eastern areas, where the recovery in groundwater levels needed to be generated from an extremely low base, rainfall over the ten weeks to the end of February served to effectively terminate the drought. Although abundant rainfall characterised most regions, winter precipitation was especially notable in Scotland. The 1989/90 winter rainfall total for Scotland – approximately 640 mm – was the highest in the 121-year Scottish rainfall series. The January-March 1990 accumulation was even more remarkable. Each of the three individual monthly rainfall totals ranks among the highest ten in a series from 1869. Some localities in western Scotland recorded precipitation on each of the first 89 days of the year[4]. The three-month rainfall total to the end of March, currently assessed at 791 mm, is easily the highest for *any* three-monthly accumulation. This extraordinarily wet beginning to the year resulted in a very sharp upturn in runoff rates and caused persistent floodplain inundation. It also helped to extend an exceptional series of wet winter half-years (October-March) in Scotland; eight of the twelve wettest on record have occurred since 1978.

February 1990

With regard to river flows and groundwater levels, February 1990 has no modern precedent. Most catchments were saturated as a result of the December/January rainfall and thus very vulnerable to further precipitation (and, in northern Britain, to snowmelt). In the event, the February rainfall total was the highest on record for Great Britain and was closely comparable with that of October 1967 – the wettest month in the last 30 years. Over wide areas, February rainfall totals were three or four times the long-term average. River flows responded very briskly. Before the end of the first week, rivers were in spate throughout the great majority of the United Kingdom. Floodplain inundation was very widespread and rivers remained at bankfull, or above, for extended periods. A measure of the transformation over the winter is provided by the flows in the River Itchen, a chalk stream in southern England, which remained at bankfull through February having recorded its lowest ever naturalised daily flow (allowing for the immediate effects of groundwater augmentation) during December 1989. Many gauging stations recorded new maximum February mean flows and in a significant minority of catchments absolute monthly runoff records were established.

Remarkably high runoff totals were registered in Scotland. Precipitation totals for January 1990 exceeded twice the average in western and central areas and further rainfall in early February, associated with a moist, and warm, south-westerly airstream, triggered notable flood events throughout much of the country. From the 4th, the mild conditions induced a thaw which was especially rapid on windward slopes – snowmelt made a substantial contribution to most of the early February flood events in northern Britain. Subsequently, sustained rainfall maintained flows at, or above, bankfull for lengthy periods – over ten weeks in extreme cases. The widespread flooding, especially in northern Scotland, resulted in the massive disruption of road and rail transport, the isolation of villages and farms and substantial damage in both rural and urban areas (see cover and Plate 1). Some farmland, particularly in the Grampian region, was inundated for many weeks – floodbanks having been extensively breached. The magnitude of the February flooding was exemplified on the Tay – the UK's largest river in terms of discharge. Antecedent precipitation had been particularly heavy in the western headwaters – at the Lochy power station 518 mm was recorded over the 25 days ending on the 4th February. With the catchment saturated and little unused storage remaining in lochs and reservoirs, the Tay was in spate from late-January[5]. Further rainfall and the associated thaw in early February produced a peak flow rate measured at the Ballathie gauging station of 1746 m^3s^{-1}, this despite considerable attenuation of the flood due to the breaching of upstream floodbanks. The associated daily mean flow (1647 m^3s^{-1}) exceeded the highest daily flow held on the Surface Water Archive; the monthly mean for February created a new record (as did the 1990 annual runoff total). The Clyde was one of a number of westward-draining Scottish rivers which, in February, comfortably exceeded its previous maximum monthly mean flow. Flooding was extensive in catchments draining from the Highlands and water levels in Loch Lomond rose close to 9.5 metres a.OD – exceeding the previous maximum in a record extending back to 1947[4]. (Levels continued to rise reaching a peak of 10.075 metres a.OD by the 11th March.)

Plate 1. Damage following the February 1990 flooding in Tayside.
Photo: Tay River Purification Board.

Whilst peak flows were less notable in southern Britain, floodplain inundation was common and rivers remained in spate for lengthy periods. The contrast with the early winter flow rates was especially notable in chalk streams in central southern England. The February runoff totals for a number of rivers in the Wessex region, for instance, easily surpassed the preceding maximum for any month and on the River Wylye (at South Newton) daily mean flows exceeded the previous maximum for fourteen days. Flows remained close to, but generally below, critical discharge rates for more than a fortnight over wide areas. Any additional rainfall in February, or a temporal redistribution of that which did fall, would have produced relatively severe flooding. In the Thames valley significant flooding was confined to the middle reaches but daily mean flows at Kingston exceeded 300 m^3s^{-1} for 15 successive days in February, the longest sequence since the major flooding of March 1947. Overbank flow was also a feature in the Severn basin for extended periods.

Based on a representative network of 33 catchments, the total freshwater outflow from mainland Great Britain in February 1990 was the highest – for any month – in at least 25 years. Figure 9 illustrates monthly outflows over the period 1965–90. The primacy of the February runoff reflects both the exceptional geographical spread of spate conditions and the very mild weather which generated a rapid,

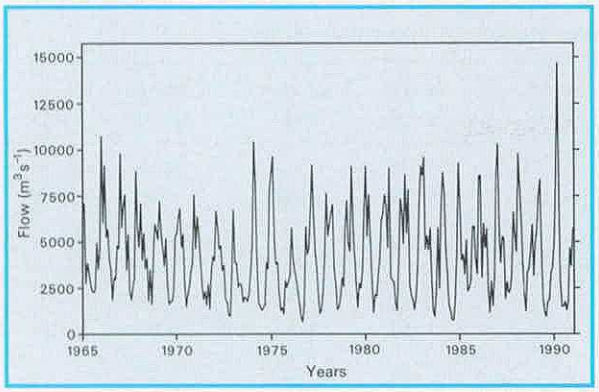

Figure 9. Monthly outflows from mainland Great Britain 1965–90.

and general, thaw early in the month. Combinations of heavy rainfall and snowmelt have produced regional runoff totals considerably in excess of those recorded in February 1990 – for example in March 1947 runoff was two or three times greater throughout much of southern England. However, as with other more recent such events, the 1947 thaw was not synchronous throughout Britain. The snowmelt contribution in February 1990 partly accounts for the very modest monthly 'loss' (rainfall – runoff, see Table 4). A further factor was the especially heavy rainfall over the last three days of January much of which boosted estuarine outflows in early February. Runoff in October 1967, which was marginally wetter than February 1990, provides an illustration of the moderating influence that relatively dry soils can exert.

TABLE 4 HIGHEST MONTHLY RUNOFF AND RAINFALL FROM GREAT BRITAIN (1960–1990)

Rank	Month	Year	Runoff (mm)	Loss (mm)	Rainfall (mm)	Rank
1	FEB	1990	165	29	194	(2)
2	DEC	1965	133	33	166	(14)
3	JAN	1974	130	29	159	(19)
4	DEC	1986	128	61	189	(3)
5	JAN	1988	122	47	169	(12)
6	DEC	1966	122	36	158	(20)
7	JAN	1975	120	43	163	(15)
8	JAN	1983	119	17	136	(48)
9	DEC	1979	113	61	174	(7)
10	MAR	1979	113	35	148	(34)
11	NOV	1984	112	63	175	(6)
12	MAR	1981	112	41	153	(24)
13	NOV	1982	110	51	161	(18)
14	OCT	1967	110	85	195	(1)
15	JAN	1984	109	62	171	(11)

The Recovery of Groundwater Levels in early 1990

The rapid elimination of most remaining soil moisture deficits in late December 1989 throughout the great majority of the English lowlands paved the way for dramatic increases in groundwater levels in January and February 1990. At the Chilgrove (West Sussex) observation borehole, which is thought to have the longest sensibly continuous record (from 1836) in the world, the water-table recovery began in mid-December when levels in the Chalk had declined to within a few centimetres of the period-of-record minimum (recorded in 1976). The ensuing 40 metre rise, over an eight-week period, has no close parallel – the rate of recovery appreciably exceeded the notable rise following the end of the 1976 drought. As a consequence spring flows broke and winterbournes began to flow for the first time in some locations since the spring of 1988. However, spatial variations in recharge amounts over the 1989/90 winter varied greatly. In parts of eastern England only a modest rise in groundwater levels occurred over the December-February period. At the Fairfields observation borehole in Suffolk, for instance, the 1989/90 recharge was estimated at less than ten per cent of the long-term average. Infiltration was also minimal over the previous winter; as a consequence groundwater levels entering the spring of 1990 were well below any previously recorded for the time of year (see Figure 18 – page 168).

The 1990 Drought

The spring of 1990 was, for England and Wales, the driest since 1893 and the warm, sunny weather encouraged very high evaporation rates. River flows remained notably high during March in Scotland but, in southern Britain, rivers were in steep recession from late-February and water-tables declined rapidly. This further hydrological transformation served to underline the particular importance of spring (March-May) rainfall in relation to water resources. Most western reservoirs were at capacity by the end of January. Many of the smaller impoundments could have been filled again over the ensuing three weeks and, in Wales especially, controlled releases were necessary to provide a measure of flood alleviation storage. The benefit of abundant runoff early in the year was however, counteracted by the very early onset of the seasonal drawdown as demand exceeded replenishment. Thus by mid-April reservoir contents at Stithians (Cornwall), for instance, fell below those registered in 1976 (when capacity was never reached but stocks were recovering slowly throughout the early spring). Although in deeper observation boreholes the time taken for water to percolate down to the water-table delayed the winter peak somewhat, a similar picture emerged in relation to groundwater levels which displayed exceptionally steep recessions from early March.

TABLE 5 NATIONAL AND REGIONAL RAINFALL TOTALS FOR SELECTED PERIODS, 1988–90

		MAR. - SEP. 90	Est. R.P. (yrs)	JAN. - SEP. 90	Est. R.P. (yrs)	AUG. 89 - SEP. 90	Est. R.P. (yrs)	NOV. 88 - SEP. 90	Est. R.P. (yrs)
England and Wales†	mm	292		567		959		1478	
	%	59	120–180	88	2–5	88	5–10	85	15–20
NRA REGIONS									
North West	mm	467		857		1331		2117	
	%	70	30–40	100		91		91	5–10
Northumbria	mm	323		570		848		1304	
	%	66	40–60	90	2–5	80	15–25	77	70–100
Severn Trent	mm	240		455		806		1253	
	%	55	120–180	81	5–10	88	5–10	85	10–20
Yorkshire	mm	279		509		790		1276	
	%	61	50–80	85	5–10	79	15–25	80	40–50
Anglian	mm	194		321		561		919	
	%	56	140–200	72	20–30	77	20–40	79	40–60
Thames	mm	187		393		708		1082	
	%	48	>200	78	5–10	85	5–10	81	20–30
Southern	mm	209		466		803		1184	
	%	51	150–200	86		86	5–10	78	40–50
Wessex	mm	244		526		942		1391	
	%	53	120–170	88		91	2–5	84	10–20
South West	mm	384		817		1430		2052	
	%	65	30–40	101		102	2–5	90	5–10
Welsh	mm	419		874		1515		2298	
	%	61	70–100	95	2–5	96	2–5	91	5–10
Scotland	mm	868		1412		2035		3158	
	%	117	5–10	143	>200	120	40–60	116	40–60
RIVER PURIFICATION BOARDS									
Highland	mm	1222		1880		2666		4201	
	%	140	150–200	161	>200	131	>200	129	>200
North-East	mm	495		752		1061		1621	
	%	89		104	2–5	87	5–10	83	30–50
Tay	mm	590		1116		1612		2491	
	%	88	2–5	127	20–30	108	2–5	104	2–5
Forth	mm	561		1005		1448		2219	
	%	91		127	30–40	108	2–5	104	2–5
Tweed	mm	417		762		1098		1662	
	%	75	10–20	106	2–5	91		87	10–15
Solway	mm	624		1163		1739		2687	
	%	83	5–10	118	5–10	102	2–5	99	
Clyde	mm	1036		1693		2489		3799	
	%	121	10–15	150	>200	126	80–100	121	80–120

* R.P. = Return Period. % = percentage of the 1941–70 average

Return period assessments are based on tables provided by the Meteorological Office*. These assume a start in a specified month; return periods for a start in any month may be expected to be substantially less. 'Wet' return periods are underlined.

The Tabony tables reflect rainfall totals over the period 1911–70 only and the return period estimates assume a sensibly stable climate.

† Based on the series derived by the Climatic Research Unit of the University of East Anglia*.

* Tabony, R C, The Variability of long duration rainfall over Great Britain, Scientific Paper No. 37, Meteorological Office (HMSO).

Whilst, in most areas, the summer (June-August) was not notably dry, by late-September an intense seven-month drought extended across much of southern Britain. Large parts of central, southern and eastern England recorded less than half the average rainfall over this period (see Figure 10). The estimated return periods associated with the rainfall deficiencies exceeded 100 years in most regions of England (see Table 5). These estimates relate to the period March to September only, if rainfall accumulations over *any* seven month period are considered then the 1990 regional figures may be seen to be appreciably less rare. Nonetheless, for England and Wales as a whole, the March to September period was the driest (for that period) in a general rainfall series beginning in 1767. Considering *any* seven-month sequence there have only been three drier periods (two in 1976 and one during the 1921 drought) this century. The hydrological impact of the drought also reflected the very substantial long term rainfall deficiencies in eastern Britain.

The hot and sunny conditions throughout the extended summer stimulated increased demand for water (especially for gardens) and triggered measures to restrict usage – mostly hose-pipe bans but restrictions on spray irrigation were applied in parts of southern and eastern England. Whilst in terms of public perception the drought assumed a high profile principally in the summer, the hydrological character of the drought reflected the warm conditions – and associated high evaporation rates – throughout the year. MORECS (Meteorological Office Rainfall and Evaporation Calculation System[6]) data demonstrate that the record potential evaporation (PE) losses registered in 1989 were eclipsed over wide areas and southern Britain experienced a lengthy period with little or no effective rainfall[7]. Table 6 ranks MORECS annual PE and Actual Evaporation (AE) totals for two grid squares (40 km by 40 km) in southern Britain. The exceptional nature of the potential evaporation losses in 1989 and 1990 is immediately evident. Largely, the rankings reflect the notable warm and sunny conditions which characterised the two-year period. Annual average temperatures for 1990 and 1989 rank first and second respectively in the central England temperature series which begins in 1659[8].

The complex interplay of factors affecting evaporation losses produced substantial differences in regional and local annual PE and AE totals. Potential evaporation totals for 1990 exceeded 650 mm over

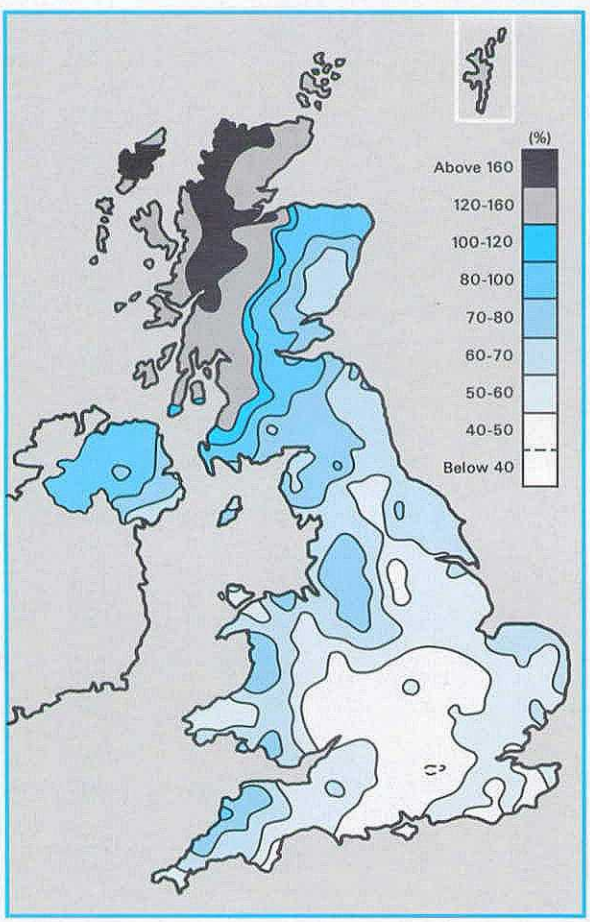

Figure 10. March – September rainfall in 1990 as a percentage of the 1941–70 average. Source: Meteorological Office.

TABLE 6 RANKED MORECS ANNUAL PE AND AE TOTALS (FOR A GRASS COVER)

MORECS SQUARE 128 (CAMBRIDGESHIRE)			MORECS SQUARE 134 (CENTRAL WALES)		
YEAR	PE (mm)	AE (mm)	YEAR	PE (mm)	AE (mm)
1968	540	517	1979	483	462
1978	543	462	1963	491	488
1981	549	483	1978	492	479
1987	553	518	1987	494	484
1972	555	421	1981	496	465
1963	563	480	1968	498	490
1971	568	483	1971	498	490
1969	569	489	1962	502	480
1977	573	467	1972	504	491
1966	578	543	1966	504	498
1965	579	488	1969	504	484
1979	580	462	1980	509	495
1980	580	508	1965	510	506
1988	581	516	1964	513	486
1962	582	464	1986	515	493
1982	586	513	1973	516	505
1985	587	512	1988	520	517
1983	590	473	1970	520	507
1973	591	512	1985	523	519
1984	606	466	1977	524	509
1986	619	540	1982	527	510
1964	621	445	1961	534	490
1974	621	518	1983	538	495
1967	626	523	1967	539	528
1961	636	452	1974	540	527
1970	638	463	1975	563	505
1975	646	485	1976	565	404
1976	636	317	**1990**	**571**	**486**
1989	**689**	**495**	**1989**	**584**	**478**
1990	**725**	**402**	1984	586	502

TABLE 7 CATCHMENT RUNOFF FOR SELECTED PERIODS 1988-90

River/ Station Name	Feb 1990		Sep 1990		4/90 to 9/90		1/90 to 9/90		10/89 to 9/90		11/88 to 9/90	
	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs	mm %LT	rank /yrs
Tay at	349	38	42	10	299	8	1172	38	1441	37	2616	37
Ballathie	318	/38	59	/38	83	/38	158	/38	129	/38	123	/37
South Tyne at	208	28	23	5	107	1	533	18	707	10	1194	4
Haydon Bridge	308	28	44	/27	45	/27	109	/27	94	/27	83	/25
Derwent at	37	17	5	1	48	1	131	2	165	1	340	1
Buttercrambe*	93	/29	36	/29	42	/29	54	/29	50	/29	53	/28
Dove at	78	25	11	5	88	2	275	3	378	2	743	3
Marston on Dove	143	/29	45	/28	51	/28	78	/28	75	/28	76	/26
Lud at	21	4	8	4	61	4	115	4	138	3	282	2
Louth	59	/22	70	/23	51	/22	52	/22	51	/22	54	/21
Little Ouse at	18	9	4	2	36	4	81	4	103	4	238	2
Abbey Heath	79	/22	53	/23	54	/23	60	/22	58	/22	70	/21
Mimram at	15	33	5	4	48	6	88	12	109	10	210	7
Panshanger Park	128	/38	62	/38	76	/38	88	/38	87	/37	86	/36
Thames at	71	106	5	11	50	19	182	53	236	47	398	28
Kingston (natr.)	216	/108	56	/108	63	/108	100	/108	96	/107	83	/106
Coln at	100	27	10	2	111	4	338	15	402	10	646	6
Bibury	189	/27	70	/27	72	/27	107	/27	102	/27	83	/26
Great Stour at	51	24	6	1	59	2	151	4	193	4	352	1
Horton	152	/26	43	/26	56	/24	70	/24	65	/23	60	/21
Itchen at	74	32	20	3	177	5	351	14	423	7	732	2
Highbridge + Allbrook	153	/32	76	/32	85	/32	98	/32	91	/32	81	/31
Stour at	156	18	5	1	62	3	331	15	429	11	668	4
Throop Mill	281	/18	42	/18	58	/18	119	/18	108	/17	87	/16
Tone at	170	30	7	2	60	2	356	16	488	15	787	4
Bishops Hull	235	/30	45	/30	47	/30	105	/29	102	/29	85	/28
Severn at	121	68	6	6	51	1	297	31	432	30	736	11
Bewdley	212	/69	27	/70	40	/70	98	/69	96	/69	85	/68
Teme at	109	19	2	1	32	1	252	7	374	8	581	2
Knightsford Bridge	209	/20	24	/21	35	/21	96	/20	100	/20	80	/19
Cynon at	393	32	20	5	150	2	944	27	1480	28	2320	14
Abercynon	300	/32	29	/32	46	/32	122	/32	119	/32	98	/30
Dee at	346	21	73	6	320	4	1147	11	1772	9	3014	5
New Inn	215	/21	53	/22	60	/21	102	/21	98	/21	88	/20
Lune at	280	28	30	6	174	2	777	18	1083	13	1948	8
Caton	302	/28	34	/28	47	/28	109	/28	96	/26	91	/24
Clyde at	224	27	36	10	204	11	771	27	939	25	1623	22
Daldowie	319	/27	62	/27	89	/27	159	/27	124	/27	113	/26

Notes (i) Except for the Thames, gauged flow data have been used.

(ii) Values are ranked so that lowest runoff is rank 1;

(iii) %LT means percentage of long term average (preceding the featured period).

*Includes the Stamford Bridge record (1961-73).

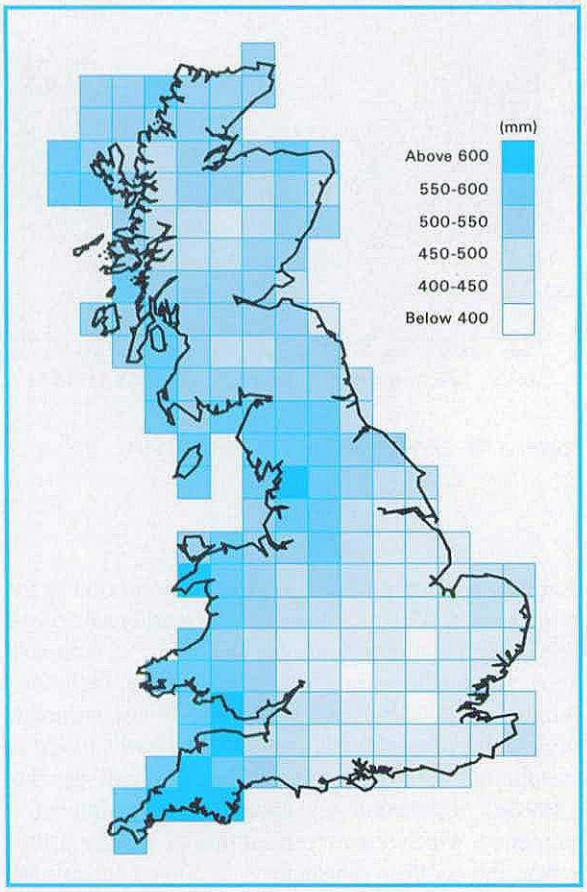

Figure 11. Actual evaporation (for grass) in 1990 – in millimetres. Data source: MORECS

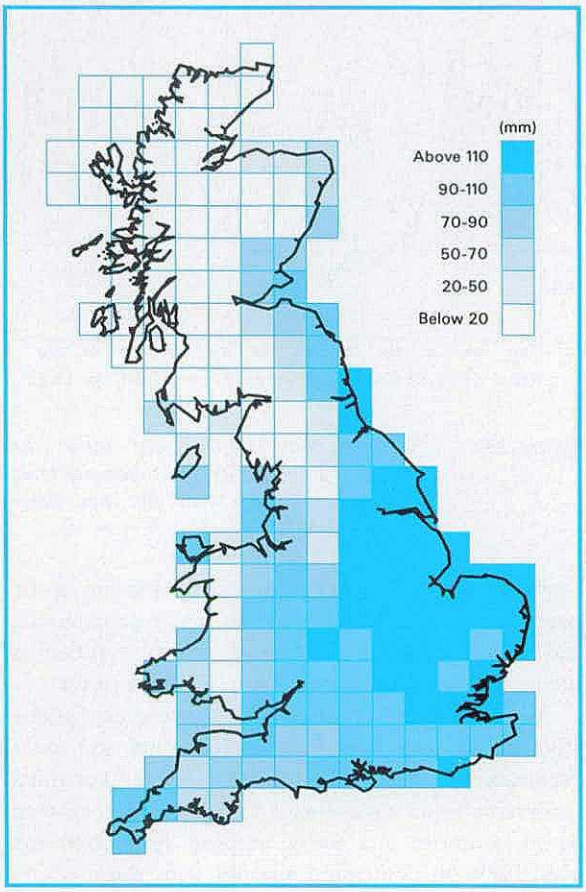

Figure 12. Soil moisture deficits (for grass) at the end of September 1990. Data Source: MORECS.

much of southern Britain (see Figure 3) and for the first three months of the year AE losses were close to, or at, record levels in most regions also. From April however shortfalls of AE relative to PE became substantial away from the wetter western and northern areas of Britain. For the year as a whole, AE losses (see Figure 11) were commonly the lowest since 1976 in the lowlands. By contrast, in much of western Britain AE totals were often the highest or close to the highest in the MORECS series. Thus transpiration losses were a more significant aggravating influence on the drought's development in the wetter regions of England and Wales than in the east where the dryness of the soils was of major hydrological significance. Figure 12 shows that very substantial SMDs were maintained well into the autumn throughout large parts of eastern and southern Britain; calculated deficits (for grass) exceeding 70 mm were maintained for over six months (two to three being more typical). MORECS deficits for the area around the Humber estuary exceeded the 70 mm threshold for approximately 12 months during the two years from January 1989; this is twice the average timespan and is unapproached in any other two-year period in a series from 1961. In many areas the late-September 1990 deficits were the equivalent of more than two months of average rainfall. Given the dry autumn in the east, one important effect was to greatly delay the onset of infiltration (see below).

Autumn 1990 runoff rates fell below the seasonal mean – by a considerable margin for rivers with flow records of less than about 25 years – throughout almost all regions. It is rare for such notably low flows to extend across almost all of Great Britain. The Dorset and Kent Stours were among a significant number of lowland rivers to establish new September minimum runoff totals (see Table 7). For the Thames, the September naturalised mean flow was the lowest since 1949 and the scale of the recession through the year was the greatest since 1947. Accumulated runoff totals over the water-year (October – September) were also amongst the lowest on record in eastern and southern catchments.

Whilst the annual minima recorded in 1990 were exceptional in relatively few catchments, the overall flow range was, in many areas, noteworthy. A few rivers, including the Ebbw and Rhymney (see Figure 13) in South Wales, recorded new instantaneous peak and minimum monthly flow rates within the space of only four months. Such exceptional volatility was rare but, taking a broad perspective, a general distinction could be made between rivers in northern and western Britain – and parts of Northern Ireland also

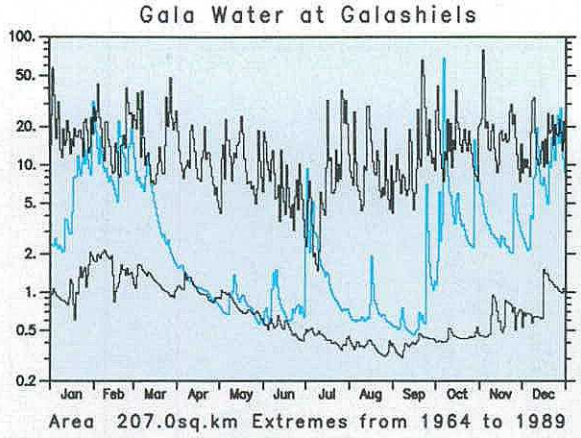

Figure 13a. 1990 river flows in the Tweed Basin. (the 1990 daily flow hydrograph is shown in blue, the period of record max. and min. daily flows in black)

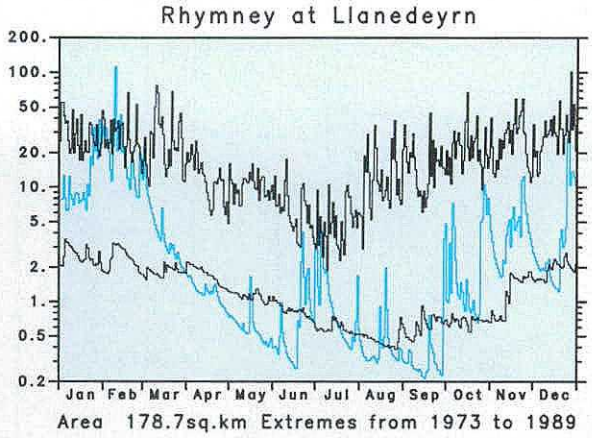

Figure 13b. 1990 river flows in South Wales.

– where 1990 witnessed an upward extension in the range of recorded flow rates in many catchments, and the downward extension which typified a substantial proportion of eastern lowland rivers.

Generally, early autumn flows were exceptionally low in both impervious catchments and more permeable catchments, often for the second or third successive year (see Plate 2). For many eastern rivers, summer and early autumn flow, patterns over 1989–90 contrasted sharply with those which characterised the preceding record. The flow duration curve for the River Derwent in Yorkshire (Figure 14) serves to emphasise the peculiar nature of flow patterns for 1989–90: flows were depressed throughout the range and the 95 per cent exceedance flow was less than 75 per cent of that for the preceding record. As with a significant proportion of eastern rivers, particularly those supported principally from groundwater, the low flow range has been largely redefined since 1988.

The accentuated seasonality implicit in the hydrographs featured on Figure 13 was even more exaggerated when the rainfall distribution is considered for the 12 months ending in September 1990; more than 60 per cent of the rainfall in some parts of England was attributable to a ten-week period in the winter. Such a distribution is more readily associated with, say, northern Portugal and climatic comparisons are made more compelling by the very mild winter of 1989/90 and the notably hot summers which preceded and followed it. The partitioning of rainfall between the winter and summer half-years in 1989/90 represents an extreme expression of a tendency which characterised much of the 1980s when the modest seasonality displayed by rainfall over much of the UK, was reinforced (see Figure 15). For England and Wales, the ratio of winter to summer half-year rainfall throughout much of the nineteenth century was close to unity. In the 1980s, the ratio commonly exceeded 1.3 and for 1989/90 the winter half-year rainfall was more than twice that of the ensuing summer for the first time in a series from 1767.

Plate 2. Low flow in the River Torridge at Torrington. Photo: Paul Mason, NRA – South West Region.

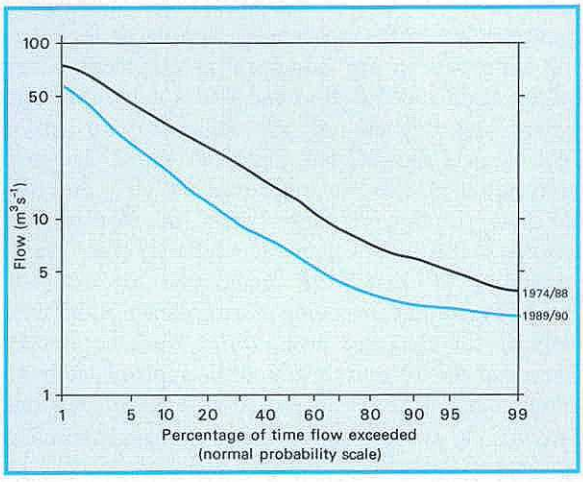

Figure 14. A comparison of flow duration curves for the River Derwent at Buttercrambe.

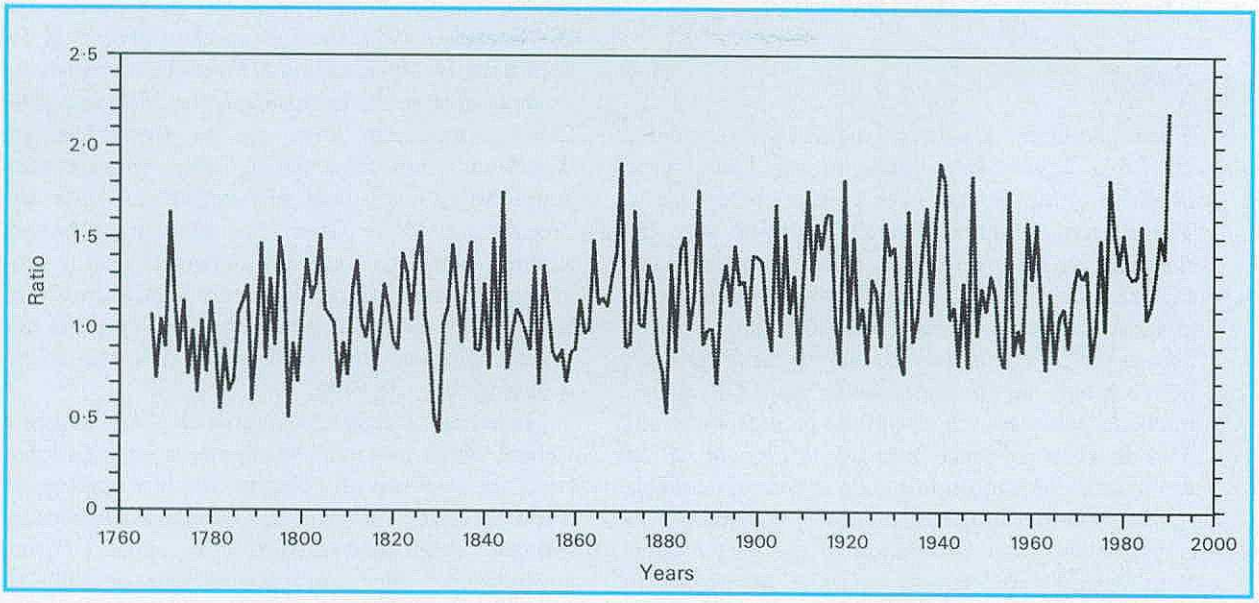

Figure 15. The ratio of winter (October – March) to summer (April – September) half-year rainfall for England and Wales.
Data source: The homogenised England and Wales rainfall series derived by the Climate Research Unit of the University of East Anglia[9].

Rainfall in October 1990 generated some increase in river flows in western and northern Britain. A number of rivers in southern Scotland were in spate by the end of the first week and peak flows in parts of the Forth and Tweed basins exceeded any previously recorded. As in the previous year however, the very dry lowland soils greatly limited the hydrological impact of the autumn rainfall and, in parts of central southern England and East Anglia, the drought increased in severity into the early winter. By late November, many spring-fed streams, and a large number of ponds, had remained dry for much of the preceding two years – the loss of amenity for extended periods since early 1988 had been considerable and was accompanied by a substantial, if temporary, loss of habitat for fish and other aquatic life. The shrinkage of drainage networks was exacerbated in some areas – for example in parts of the Chilterns, the North Downs, Dorset and East Anglia – by the impact of heavy groundwater abstraction on river flows. Generally the reduction in runoff, which is particularly evident in the headwaters, reflects long term increases in groundwater pumping often extending over 40 years or more. However, for much of the post-1976 period, the effects have been disguised or ameliorated by the preponderance of relatively wet winters.

Soils remained remarkably dry at the beginning of winter in 1990 in parts of southern and eastern England. On the basis of the results from a percolation model developed by the Thames region of the National Rivers Authority, the late-November SMDs rank as the highest in a 70-year series for parts of the Thames Valley. By early December, flows in the River Thames had fallen to the lowest for December since 1947 as the Thames Valley experienced its tenth successive month with below average rainfall. On a countrywide basis the outlook was least encouraging in water resources terms where the 1990 drought overlay a substantial long term rainfall deficiency – broadly the affected region embraced much of the South-East and East Anglia.

Widespread blizzards in the second week of December heralded a further change in weather conditions. A series of active depressions on a mild south-westerly airflow brought substantial rainfall to all areas and generally produced a transformation in river flows reminiscent of, but considerably less dramatic than, that witnessed a year earlier. The water resources outlook improved considerably by the year end and aquatic habitats began to take on a more familiar appearance. Nonetheless, in parts of the lowlands – especially in a zone extending from Kent to Lincolnshire – the drought was far from terminated. Groundwater levels in late December remained amongst the lowest on record and, with a much truncated period available for further recharge before accelerating evaporation rates in the spring signalled the beginning of the 1992 recession, there was every expectation that depressed groundwater levels and very modest baseflows in rivers would continue well into 1991.

The Severity of the Drought

Runoff

The accumulated catchment runoff totals presented in Table 7 provide a guide to the hydrological intensity of the drought over a variety of durations. The periods featured generally coincide with the ranges of months over which, at least in certain parts of Great Britain, the 1988–90 drought achieved its greatest severity. Mean flows for February and September 1990 are given to help quantify the scale of the runoff decline through the year. The quoted rankings refer to the specified periods only and provide clear evidence both of the length of the drought in the English lowlands and the remarkable spatial variation in runoff rates across Britain. This is particularly true in relation to the longer durations: accumulated runoff over the 23 months to September 1990 for gauging stations in eastern and southern England closely approached or superseded the previous lowest 23-month totals. In the same timeframe, outflows from rivers draining the Scottish Highlands were very abundant, sometimes unprecedented.

A more rigorous assessment of drought severity may be made if the low flow analyses are freed from the rather arbitrary constraints imposed by considering fixed sequences of days or months[10]. Thus whilst, for instance, the May to November 1990 mean naturalised flow for the Thames (at Kingston) was clearly the lowest, for that specified period, since the major structured alterations to the gauging station in 1951, three lower 7-month accumulations (albeit overlapping) were recorded during the 1976 drought. Where hydrometric records provide only a relatively short historical perspective, the longer term accumulations in 1989/90 remain very outstanding. The combined 1989 and 1990 runoff totals on the Yorkshire Derwent and the Lud (Lincolnshire), for example, are lower than any previous 24-month accumulations.

Generally, the length of period over which depressed flow rates were maintained was more exceptional than the short period minima registered in the summer of 1990. Over the latter half of the year flows throughout much of the lowlands – and extending north along the eastern seaboard – remained close to the seasonal minimum. Table 8 ranks the eight lowest annual n-day flows over a range of durations for three English gauging stations. For the Leven (a tributary of the Tees) the 1990 low flows were significantly less severe than those for 1976 over the shorter durations and, for periods exceeding about three months, the 1990 n-day minimum rank second to the sustained drought flows during 1964. However, over the longer durations both the 1989 and 1990 minimum flow sequences rank in the lowest three in a 31-year record. Whilst runoff patterns in nearby catchments suggest that exceptionally low flows would also have occurred in the Leven in 1959, there is no close precedent for such notably depressed runoff rates being registered in successive years. In Scotland, the 1989 and 1990 240-day minimum flows on the River Dee (at Woodend – not featured in Table 8) were each appreciably lower than any registered since the drought of 1976. Over the intervening period, summer flow rates generally remained healthy providing a pointed contrast in eastern Scotland with the early 1970s; the 240-day minima for each of the five years beginning with 1971 was below the corresponding flow for 1990.

In terms of flow characteristics the Hampshire Itchen, which has a stable regime, is very different from the responsive Leven but the low rankings in Table 8 for the 1989 and 1990 droughts are broadly similar. Augmentation of low flows (using groundwater) for significant periods in 1989–90 implies that the River Itchen data need to be treated with caution. Nonetheless, the presence of 1988 as well as 1989 and 1990 in the lowest six 240-day minima for the Highbridge/Allbrook gauging station testifies to a drought of considerable severity and remarkable duration.

TABLE 8 RANKED ANNUAL MINIMUM N-DAY FLOWS

River/Gauging station	Durations: 30-day Year	30-day Mean flow m^3s^{-1}	60-day Year	60-day Mean flow m^3s^{-1}	120-day Year	120-day Mean flow m^3s^{-1}	240-day Year	240-day Mean flow m^3s^{-1}
River Leven at Leven Br.	1976	0.121	1976	0.146	1964	0.239	1964	0.326
	1990	**0.186**	**1990**	**0.194**	**1990**	**0.272**	**1990**	**0.419**
Period of record:	1964	0.188	1964	0.202	**1989**	**0.343**	**1989**	**0.459**
1960–90	1960	0.228E	**1989**	**0.280**	1975	0.331	1962	0.590
	1989	**0.240**	1975	0.284	1961	0.370	1970	0.613
	1972	0.254	1970	0.292	1977	0.384	1976	0.665
	1965	0.256	1961	0.296	1972	0.392	1975	0.693
	1975	0.267	1972	0.298	1962	0.399	1961	0.745
River Wissey at Northwold*	**1990**	**0.226**	**1990**	**0.247**	**1990**	**0.282**	**1990**	**0.493**
	1976	0.281	1976	0.301	**1989**	**0.390**	**1989**	**0.697**
Period of record:	**1989**	**0.341**	**1989**	**0.355**	1976	0.409	1976	0.741
1956–90	1964	0.426	1964	0.472	1964	0.540	1959	0.818
	1957	0.431	1957	0.478	1959	0.565	1964	0.860
	1959	0.444	1959	0.479	1957	0.608	1956	0.920E
	1986	0.503	1974	0.567	1974	0.674	1957	0.941
	1960	0.534	1986	0.569	1960	0.678	1960	1.050
River Itchen at Highbridge/ Allbrook	1976	2.303	1976	2.389	1976	2.520	1976	3.002
	1989	**2.575**	**1989**	**2.688**	**1989**	**2.796**	1973	3.112
	1959	2.637	1973	2.738	1973	2.804	**1989**	**3.313**
	1973	2.650	1959	2.757	**1990**	**2.873**	**1990**	**3.341**
Period of record:	**1990**	**2.736**	**1990**	**2.777**	1959	3.026	1965	3.826
1959–90	1961	2.956	1961	3.102	1978	3.267	1988	3.940
	1978	3.057	1972	3.120	1961	3.301	1959	3.965
	1987	3.064	1978	3.134	1978	3.303	1962	3.971

E = estimated

*Changes to the arrangement of the gauging facilities imply that there is not full equivalence between the pre and post-1980 flow data. The featured rankings are, however, largely unaffected.

The River Wissey drains a predominantly agricultural catchment developed on the Chalk (covered in some areas by Boulder Clay) of East Anglia. Spray irrigation has increased appreciably in recent years but overall the net impact of abstrations and discharges on the flow regime is relatively minor.The catchment lies in a zone - extending broadly from Lincolnshire to Kent - where the 1990 drought achieved its greatest severity. Although the absolute daily minimum (recorded in 1976) on the Wissey was not superseded during the recent drought, the 1990 minima are outstanding over durations in excess of about a month. Excluding 1976, the n-day minima for 1990 were little over half the corresponding pre-1989 minima. This, together with the unprecedented runoff deficiencies recorded throughout 1990 - December was the 29th successive month with below average mean flows - points to a drought of a very exceptional magnitude.

Groundwater levels

A general co-incidence may be identified between the regions with the largest long term (more than two years) rainfall deficiencies in late 1990 and the outcrop areas of the major aquifers - the Chalk especially. It is to be expected therefore that in groundwater terms the 1989-90 drought would be particularly severe. The low aquifer storages which characterised large areas in the latter half of 1990 reflect both the sustained recession in levels from the early spring and the very limited recharge in eastern areas since early 1988 when water-tables stood well above average throughout most major aquifers. Recharge during the 1988/89 winter half-year was the lowest since 1975/76 over large areas and foreshadowed a further lengthy period of limited rainfall and high evaporative losses which provided little opportunity for levels to be restored to their normal range. In some regions groundwater abstraction was an exacerbating factor. Many boreholes recorded levels close to, or below, the seasonal minimum in the autumn and early winter of both 1989 and 1990; the hydrographs presented on Figure 18 testify also to the exceptional range of level variation over the 1988-90 period.

Table 9 ranks annual minimum levels for two of the longest borehole records on the national groundwater level archive maintained by the British Geological Survey; both boreholes monitor levels in the Chalk and Upper Greensand aquifer, one in Sussex (at Compton) the other towards the northern limit of the Chalk outcrop in the Yorkshire Wolds (Dalton Holme). At Compton, most of the noteworthy twentieth century droughts over southern Britain feature in the twenty ranked minima. The early to mid-1970s figure prominently: a sustained rainfall deficiency in the initial years of the decade (when winter recharge was limited) resulted in a succession of low annual minima. Subsequently, levels recovered only to plunge once more during the very intense drought of 1975/76 when winter recharge was minimal. The recent annual minima failed to eclipse that of 1976 but there are no lower December minimum in the 96-year Compton record than those registered in 1989 and 1990, although they closely equate to that registered in 1973. The annual minimum levels for 1989 and 1990, both also recorded in December, at the nearby Chilgrove well were even more outstanding. Only in 1973, in a record from 1836, has an equivalent winter minimum to those of 1989 and 1990 been recorded.

In Humberside the drought achieved an even greater intensity. At Dalton Holme groundwater levels have been measured continuously since 1889 and appear to have been little affected by pumping in the vicinity. This important record affords a means of comparing periods of severe groundwater depletion in the Chalk of eastern Yorkshire and Humberside. Considering the full 101-year record, the annual fluctuations indicate that recharge over the 1988/89 winter ranks eighth lowest and that for 1989/90 fourteenth. However, when the combined recharge estimates for successive winters are examined, that for 1988-90 ranks third lowest behind 1912-14 and 1947-49. In the latter two drought episodes, the water-table stood at an historically high level prior to the onset of the sustained recessions. This factor largely explains why groundwater levels in the earlier droughts failed to fall to the very depressed levels recorded in 1990.

TABLE 9 RANKED ANNUAL MINIMUM GROUNDWATER LEVELS IN THE CHALK AND UPPER GREENSAND

	COMPTON (1893-1990)		DALTON HOLME (1889-1990)	
Rank	Year	Min. Level (m OD)	Year	Min. Level (m OD)
1	1976	27.64	**1990**	**10.34**
2	1974	27.84	**1989**	**10.73**
3	1973	27.92	1988	11.51
4	**1990**	**27.96**	1905	11.58
5	**1989**	**28.24**	1922	11.61
6	1972	28.88	1965	11.74
7	1934	29.00	1921	11.81
8	1921	29.00	1906	11.84
9	1969	29.02	1976	11.87
10	1978	29.27	1984	11.88
11	1959	29.32	1942	11.89
12	1970	29.41	1949	12.09
13	1971	29.53	1986	12.14
14	1944	29.70	1954	12.17
15	1922	29.70	1950	12.32
16	1975	29.95	1985	12.36
17	1984	30.00	1943	12.39
18	1947	30.10	1953	12.47
19	1919	30.10	1929	12.47
20	1979	30.17	1946	12.62

The location of the two boreholes are shown on page 165.

Table 9 confirms that the annual minima for 1988, 1989 and 1990 at Dalton Holme rank third, second and first in the entire series. Whilst, a

monthly monitoring cycle may, on occasions, not capture the full range of groundwater variation, it is clear that the 1988–90 groundwater drought in the southern Wolds (and over a larger area extending south into East Anglia) is without parallel in the twentieth century. Evidence from monitoring boreholes in other Yorkshire boreholes suggest that the 1990 depletion appears, for Yorkshire as a whole, to be easily the most severe on record - most observation borehole records date from the late-1960s and early-1970s.

To the south, assessments of drought severity in 1990 are hampered by the dearth of long continuous borehole records (unaffected by pumping) and, more significantly, the fact that no real termination to the drought could be recognised at year end. In many eastern areas, further limited recharge over the 1990/91 winter is indicative of even lower groundwater levels in prospect. It is clear that the full magnitude of the groundwater drought in the English lowlands will not become evident until late-1991 at least. Nonetheless, by December 1990 levels throughout large parts of East Anglia, and extending into neighbouring regions, had declined to close to, or below, the minimum on record. In many areas the modest subsequent recharge resulted in the 1991 recessions beginning at a similar level to those of the spring of 1973 - previously the most severe period of groundwater depletion in the recent past throughout much of eastern England. Although the groundwater drought generally decreased in severity away from the English lowlands, late-autumn/early-winter levels in 1990 throughout most of the principal aquifers had generally declined below any registered over the previous decade at least (see Table 10).

Considering lowland England as a whole, late autumn/early winter levels similar to those of 1989 and 1990 were recorded over wide areas in the 1976, 1973, 1964 and 1959 droughts. In central southern England levels generally remained depressed for substantially longer over the 1975/76 drought. At Rockley (near Swindon), for instance, the borehole remained dry throughout 1976 whereas in 1990 it was dry for less than three months. To the east, however, an obvious reversal in the relative severity

TABLE 10 THE 1990 DROUGHT - GROUNDWATER LEVELS IN DECEMBER

Borehole	Aquifer	NGR	First year of record	Av Dec level *	December 1990		No. of yrs with Dec. levels <1990	Lowest recorded level for any month prior to 1990
					Day	Level		
Dalton Holme (Humberside)	C. & U.G.	SE965453	1889	15.74	31	10.98		10.73
Washpit Farm (Norfolk)		TF814196	1950	43.48		41.31		41.24
The Holt (Hertfordshire)		TL169197	1964	86.89	06	85.81		83.90
Little Bucket (Kent)		TR123469	1971	64.05		57.63		56.77
Compton House (West Sussex)		SU775149	1894	39.65		27.96		27.64
Ashton Farm (Dorset)		SY662881	1977	66.88		63.20		67.62
New Red Lion (Lincolnshire)		TF089303	1964	12.70		5.49		3.29
Ampney Crucis (Gloucestershire)	M.J.	SP060019	1958	101.97		97.38		97.86
Bussels (Devon)	P.T.S.	SX953987	1972	23.74		23.46		22.90
Alstonfield (Derbyshire)	C.B.	SK129555	1974	192.33	18	186.64		174.22

* Groundwater levels are in metres above Ordnance Datum.

C & U.G. Chalk and Upper Greensand
L.L. Lincolnshire Limestone
P.T.S. Permo-Triassic Sandstones
M.J. Middle Jurassic Limestone
C.B. Carboniferous Limestone

of the droughts may be detected as the meagre recharge over the winters of both 1988/89 and 1988/90 produced an exceptionally lengthy period of groundwater depletion. In a broad zone from the Chilterns to Lincolnshire groundwater levels in early winter 1990 stood below previously recorded minima. In the Midlands, levels in the Permo-Triassic sandstone aquifer, though less notably depressed, were generally at their lowest since the 1976 drought. Taking a longer historical context, it is clear that groundwater levels were persistently depressed during the 1940s and - on more limited evidence - the 1850s was also a decade characterised by low, to very low, groundwater levels.

Conclusion

1990 was a year of extraordinary spatial and temporal contrasts in the patterns of rainfall, river flow and aquifier recharge across most of the United Kingdom. Over the thirty or so years for which reasonably comprehensive surface water and groundwater monitoring networks have been in place, there is no close precedent to the extension of the range of recorded variation in rates of runoff and recharge in a single year. Whilst late winter runoff rates were exceptionally high in the wetter regions of Britain, sustained drought conditions impacted most heavily on those areas where the margin between water supply and demand is already relatively narrow. The inordinate recent seasonal contrasts in precipitation has highlighted the importance of its distribution in time as well as the overall amount, in causing hydrological stress. High evaporation rates and limited groundwater recharge - extending over a three-year period - served to emphasise the fragility of water resources in much of eastern England in the face of long term rainfall deficiencies. Ecological and amenity problems were exacerbated in certain, mostly lowland, areas where the impact of an evolving pattern of water use on natural flows has made headwaters especially vulnerable to drought conditions.

The exceptionally warm weather, parched soils, enhanced seasonality in rates of runoff and recharge and the threat posed to water resources in some areas, stimulated considerable public and scientific debate. Scientific and media interest was fuelled in particular by an apparent similarity between the conditions experienced in 1990 and an emerging consensus regarding the possible impact of climate change on hydrological systems and water resources. Given the capricious nature of the British climate, any attempt to draw general conclusions on the basis of a single remarkable year would clearly not be warranted. Nonetheless, the impact on natural systems, and on the community, of the weather patterns experienced over 1989-90 may provide important insights regarding our vulnerability to climate change.

On the evidence of historical data, the conditions experienced in 1989-90 may be expected only rarely. If as a consequence of climate change, such conditions recur with a significantly greater frequency in the future, the implications for the water industry and for the environment will be considerable. As research continues on a broad front to better assess the likely impact of global warming on rainfall patterns at the national scale, a continuing commitment to careful hydrometric monitoring will be essential to identify and quantify the effects on river flow and groundwater recharge throughout the UK. With relatively few rivers or aquifiers, especially in the lowlands, unaffected by man's activities the detection, unambiguously, of any climate-induced trends remains a considerable scientific challenge and underlines the importance of lengthy, quality controlled, records of rainfall, river flow and groundwater levels.

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Computation and Accuracy of Gauged Flows

Gauged flows are generally calculated by the conversion of the record of stage, or water level, using a stage-discharge relation, often referred to as the rating or calibration. Stage is measured and recorded against time by instruments usually actuated by a float in a stilling well. The instrument records the level either digitally, on a solid state logger, less commonly on punched tape, or continuously by pen and chart. At well over half the gauging stations in the United Kingdom provision is made for the routine transmission of river levels directly to the processing centre, by telephone line or, less generally, by radio; on occasions satellites have been used to receive and re-transmit the radio signal. The rapid growth in the use of the public telephone network for the transmission of river level and flow data is enabling hydrometric data acquisition to proceed on a near real-time basis in most areas. Typically, levels are recorded at 15-minute intervals and stored on-site for overnight transmission to allow the initial processing to be completed on the following day. Normally, both digital and analogue recording devices are deployed at gauging stations to provide a measure of security against loss of record caused by instrument malfunction.

The stage-discharge relation is obtained either by installing a gauging structure, usually a weir or flume with known hydraulic characteristics, or by measuring the stream velocity and cross-sectional area at points throughout the range of flow at a site characterised by its ability to maintain the relationship.

The accuracy of the processed gauged flows therefore depends upon several factors:

i. accuracy and reliability in measuring and recording water levels,
ii. accuracy and reliability of the derived stage-discharge relation, and
iii. concurrency of revised ratings and the stage record with respect to changes in the station control.

Flow data from ultrasonic gauging stations are computed on-site where the times are measured for acoustic pulses to traverse a river section along an oblique path in both directions. The mean river velocity is related to the difference in the two timings and the flow is then assessed using the river's cross-sectional area. Accurate computed flows can be expected for stable river sections and within a range in stage that permits good estimates of mean channel velocity to be derived from a velocity traverse set at a series of fixed depths.

Flow data from electromagnetic gauging stations may also be computed on-site. The technique requires the measurement of the electromotive force (emf) induced in flowing water as it cuts a vertical magnetic field generated by means of a large coil buried beneath the river bed, or constructed above it. This emf is sensed by electrodes at each side of the river and is directly proportional to the average velocity in the cross-section.

British and International Standards are followed as far as possible in the design, installation and operation of gauging stations. Most of these Standards include a section devoted to accuracy, which results in recommendations for reducing uncertainties in discharge measurements and for estimating the extent of the uncertainties which do arise.

The Surface Water Archive exists to provide not only a central database and retrieval service but also an extra level of hydrological validation. To further this aim, project staff at the Institute of Hydrology liaise with their counterparts in the water industry on a regional basis and, by visiting gauging stations and data processing centres, endeavour to maintain the necessary knowledge of local conditions and problems.

Scope of the Flow Data Tabulations

River flow data are presented in two parts. In the first, daily mean gauged flows are tabulated for 49 gauging stations; daily naturalised flows (see page 95) are also tabulated for the River Thames at Kingston. Monthly flow data for a further 160 gauging stations are given in the second part. The featured gauging stations have been selected to give a broad geographical coverage and to typify a wide range of catchment types found throughout the United Kingdom. A map (Figure 16) is provided on page 44 to assist in locating the gauging stations featured in this section.

For each gauging station, basic reference information is given together with comparative average and extreme river flow and rainfall figures based upon the archived record.

Explanatory notes precede the two sets of tables and are provided to assist in the interpretation of particular items. The notes relating to the daily flow tables are given overleaf; those relating to the monthly data are given on page 96.

Part (i) – the daily mean flow tabulations

Station Number

The gauging station number is a unique six-digit reference number which serves as the primary

identifier of the station record on the Surface Water Archive. The first digit is a regional identifier being 0 for mainland Britain, 1 for the islands around Britain and 2 for Ireland. This is followed by the hydrometric area number given in the second and third digits. Hydrometric areas are either integral river catchments having one or more outlets to the sea or tidal estuary or, for convenience, they may include several contiguous river catchments having topographical similarity with separate tidal outlets. In Britain they are numbered from 1 to 97 in clockwise order around the coastline commencing in north-east Scotland: Ireland has a unified numbering system from 1 to 40, commencing with the River Foyle catchment and circulating clockwise; not all Irish hydrometric areas, however, have an outlet directly on the coast.

The numbers and boundaries of the United Kingdom hydrometric areas are shown in the frontispiece.

The fourth, fifth and sixth digits comprise the number, usually allocated chronologically, of the gauging station within the hydrometric area.

Where the leading digit, or digits, are zero they may be omitted giving rise to apparent four or five-digit reference numbers.

Measuring Authority

An abbreviation referencing the organisation responsible for the provision of river flow data to the Surface Water Archive. A list of measuring authority codes together with the corresponding names and addresses for organisations currently contributing data to the Surface Water Archive appears on pages 190 to 191.

Grid Reference

The initial two-letter and two-figure codes each designate the relevant 100 kilometre National Grid square or Irish Grid square; the standard six-figure map reference follows.

Note: Irish Grid references - which are italicised - have only one prefix letter but it is common practice to precede it with the letter I to make the identification clear.

Catchment Area

The surface catchment area, in the horizontal plane, draining to the gauging station in square kilometres. There are a few gauging stations where, because of geological considerations, or as a result of water transfers - for instance, the use of catchwaters to increase reservoir yields - the actual contributing area may differ appreciably from that defined by the topographical boundary. In consequence, the river flows whether augmented or diminished, may cause the runoff (as a depth in millimetres) values to appear anomalous.

First Year

The year in which the station started producing daily mean flow data, usually the first year for which data are held on the Surface Water Archive. Earlier data, often of a sporadic nature or of poorer quality, may occasionally be available from the measuring authorities or other sources.

Level of Station

The level of the station is, generally, the level of the gauge zero in metres above Ordnance Datum, or above Malin Head Datum for stations in Northern Ireland. Although gauge zero is usually closely related to zero discharge, it is the practice in some areas for an arbitrary height, typically one metre, to be added to the level of the lowest crest of a measuring structure to avoid the possibility of false recording of negative values by some digital recorders.

Maximum Altitude

The level to the nearest metre of the highest point in the catchment.

Table of daily mean gauged (or naturalised) discharges

The mean flow in cubic metres per second (abbreviated to m^3s^{-1} and sometimes also referred to as 'cumecs') in a water-day, normally 09.00 to 09.00. The naturalised discharge is the gauged discharge adjusted to take account of net abstractions and discharges upstream of the gauging station.

Peak Flow: The highest flow in cubic metres per second for each month. The day of peak generally refers to the water-day but the calendar day is also used, particularly in Scotland. Normally the peak flow corresponds to the highest fifteen-minute flow where water levels are recorded digitally, or the highest instantaneous flow associated with maximum stage where analogue recorders are used.

Runoff: The notional depth of water in millimetres over the catchment equivalent to the mean flow for the month as measured at the gauging station. It is computed using the relationship:

$$\text{Runoff in mm} = \frac{\text{Average Flow in Cumecs} \times 86.4 \times n}{\text{Catchment Area (km}^2\text{)}}$$

where n is the number of days in the month. The runoff total is rounded to the nearest millimetre.

Rainfall: The rainfall over the catchment in millimetres for each month. Each areal rainfall total is derived from a one kilometre square grid of rainfall values generated from all daily and monthly rainfall data available from the Meteorological Office†. Validation procedures allow for the rejection of obviously erroneous raingauge observations prior to the gridding exercise. A computer program then calculates catchment rainfall by averaging the values at the grid points lying within the digitised catchment boundary.

Statistics of monthly data for previous record

Only complete monthly records are used in the derivation of the average, low and high values of river flow, runoff and rainfall. The rainfall and runoff statistics are normally directly comparable but full equivalence will not obtain where the pattern of missing data differs between the archived rainfall and runoff data sets.

Where applicable, a guide to the amount of missing data is given following the section heading. Some slight variations from the statistics held by the measuring authorities may occur; these may be due to the different methods of computation or the need for uniformity in presentation.

Summary statistics

Current year flow statistics are tabulated alongside the corresponding values for the previous record. Where appropriate, the current year figures are expressed as a percentage* of the preceding average.

Mean Flow: The average of all available daily mean flows during the term indicated.

Lowest Daily Mean: The value and date of occurrence of the lowest mean flow in cubic metres per second in a water-day during the term indicated. In a record in which the value recurs, the date is that of the last occasion.

River flow measurement tends to become more imprecise at very low discharges. Very low velocities, heavy weed growth and the insensitivity of stage-discharge relations combine with the difficulty of accurately measuring limited water depths to reduce the accuracy of computed flows. The reliability of both the lowest daily mean flow and the 95 per cent exceedance flows (see below) as representative measures of low flow must, therefore, be considered carefully and the values used with caution in view of the increasing proportional variability between the natural flow and the artificial influences, such as abstractions, discharges and storage changes as the river flow diminishes.

† For the IH research catchments, the monthly totals are subsequently updated using areal figures derived from a dense local raingauge network.

* As a consequence of leap years the runoff and mean flow percentage may not be identical.

Peak: The peak flow in cubic metres per second during the term indicated. The date of occurrence, normally the water-day, is also indicated. Generally, the peak flows are derived from the record of monthly instantaneous maximum flows stored on the Surface Water Archive. As a result of particular flow measurement difficulties in the flood range, this peak flow series is often incomplete. Reference to Volume IV of the Flood Studies Report[1] should be made to check for historical flood events which may exceed the peak falling within the gauged flow record.

10% exceedance: The flow in cubic metres per second which was equalled or exceeded for 10 per cent of the specified term – a high flow parameter which, when compared with the mean may give a measure of the variability, or 'flashiness', of the flow regime. The 10 per cent exceedance value is computed using daily flow data only for those years with ten days, or less, missing on the Surface Water Archive.

50% exceedance: The flow in cubic metres per second which was equalled or exceeded for 50 per cent of the specified term – the median value. The same conditions for completeness of the annual records apply as for the 10 per cent exceedance flow.

95% exceedance: The flow in cubic metres per second which was equalled or exceeded for 95 per cent of the specified term – a significant low flow parameter relevant in the assessment of river water quality consent conditions. The same conditions for completeness of the annual records apply as for the 10 per cent exceedance flow.

Factors affecting flow regime

An indication of the various types of abstractions from, and discharges to, the river operating within the catchment which alter the natural flow is given by a standard set of abbreviated descriptions. In Part (ii) – the monthly flow data – each description is shortened to a code letter. An explanation of the abbreviated descriptions and the code letters is given overleaf. With the exception of the induced loss in surface flow resulting from underlying groundwater abstraction, these codes and descriptions refer to quantifiable variations and do not include the progressive, and difficult to measure, modifications in the regime related to land-use changes.

Except for a small set of gauging stations for which the net variation, i.e. the sum of abstractions and discharges, is assessed in order to derive the 'naturalised' flow from the gauged flow, the record of individual abstractions, discharges and changes in storage as indicated in the code above is not held centrally.

[1] Flood Studies Report 1975. Natural Environment Research Council (5 vols.).

CODE	EXPLANATION	ABBREVIATED DESCRIPTION
N	Natural, i.e., there are no abstractions and discharges, or the variation due to them is so limited that the gauged flow is within 10 per cent of the natural flow at, or in excess of, the 95 per cent exceedance flow.	Natural within 10 per cent at the 95 per cent exceedance flow.
	Storage or impounding reservoir. Natural river flows will be affected by water stored in a reservoir situated in, and supplied from, the catchment above the gauging station.	Reservoirs in catchment.
R	Regulated river. Under certain flow conditions the river will be augmented from surface water and/or groundwater storage upstream of the gauging station.	Augmentation from surface water and/or groundwater.
	Public water supplies. Natural river flows are reduced by the quantity abstracted from a reservoir or by a river intake if the water is conveyed outside the gauging station's catchment area.	Abstraction for public water supply.
	Groundwater abstraction. Natural river flow may be reduced or augmented by groundwater abstraction or recharge. This category includes catchments where mine-water discharges influence the flow regime.	Flows influenced by groundwater abstraction and/or recharge.
	Effluent return. Outflows from sewage treatment works will augment the river flow if the effluents originate from outside the catchment.	Augmentation from effluent returns.
	Industrial and agricultural abstractions. Direct industrial and agricultural abstractions from surface water and from groundwater may reduce the natural river flow.	Flow reduced by industrial and/or agricultural abstraction.
H	Hydro-electric power. The river flow is regulated to suit the need for power generation.	Regulation for HEP.

Station and catchment description

A short commentary providing a guide to the characteristics of the station, its flow record and the catchment it commands; refer to page 193 for an explanatory listing of the abbreviations and acronyms used. The principal objectives of this summary information are to assist data users in the selection of gauging station records appropriate to their needs and to assist in the interpretation of flow variability at individual gauging stations particularly where the natural flow pattern is significantly disturbed by artificial influences.

A comprehensive set of gauging station and catchment descriptions is provided in the 'Hydrometric Register and Statistics 1981–5' (see page 192). Further details of the net impact of abstractions and discharges on river flow patterns are given in: Gustard, A., Bullock, A. and Dixon, J.M. 1992. Estimating Low River Flows in the United Kingdom. Institute of Hydrology (in press).

Comment

A summary of any important factors influencing the accuracy of the current year's flow data specifically; for instance, the reconstruction of a gauging station or the use of extrapolated stage-discharge relations during periods of very low or very high flows.

STATIONS FOR WHICH DAILY OR MONTHLY DATA ARE GIVEN IN THE RIVER FLOW SECTION

continued on page 45

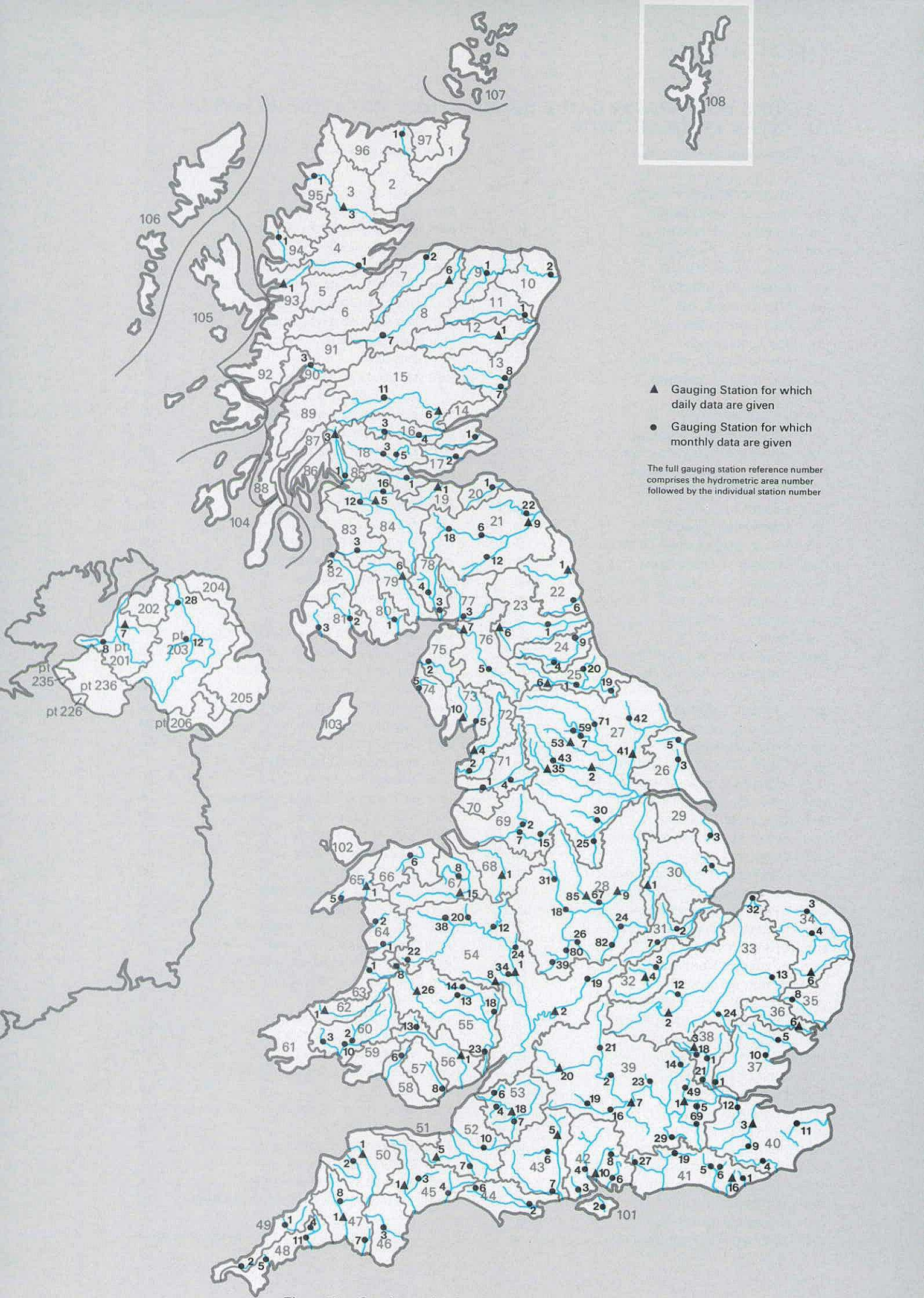


Figure 16. Gauging station location map.

A 'D' indicates that the featured station is in the daily flow section.

003003 Oykel at Easter Turnaig 1990

Measuring authority: HRPB
First year: 1977
Grid reference: 29 (NC) 403 001
Level stn. (m OD): 15.60
Catchment area (sq km): 330.7
Max alt. (m OD): 998

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.626	20.970	10.320	5.174	2.416	1.343	56.810	0.740	10.620	45.530	19.810	4.659
2	2.010	39.330	26.700	12.980	2.056	1.766	16.890	0.805	27.150	31.510	15.430	21.450
3	2.054	24.730	154.600	8.779	1.779	4.782	18.880	0.759	14.850	29.100	10.560	21.700
4	1.686	67.600	66.130	14.990	1.498	29.310	9.761	0.825	22.420	35.400	6.227	16.600
5	2.742	71.300	138.000	29.490	8.664	10.600	9.161	11.830	11.270	93.410	5.240	8.593
6	4.887	25.470	108.700	10.230	35.370	54.740	9.961	13.370	17.030	37.120	4.265	55.810
7	7.943	34.320	59.010	5.737	26.990	82.460	20.610	7.753	10.760	22.110	3.498	16.720
8	8.509	27.400	21.410	4.394	10.710	15.220	31.940	9.167	8.331	23.040	2.972	8.272
9	11.970	30.300	23.560	11.580	5.127	6.820	78.950	5.510	5.266	78.080	2.572	8.185
10	30.130	23.320	303.900	25.610	3.390	4.207	20.730	7.137	4.368	42.240	2.577	7.024
11	19.830	17.520	65.590	11.030	2.593	3.155	10.380	6.069	3.250	22.560	2.838	133.500
12	13.920	11.340	18.550	10.080	2.053	2.495	6.821	13.760	2.898	14.270	3.021	18.620
13	10.250	10.800	12.020	8.944	1.742	2.065	4.096	6.328	2.361	7.436	3.574	9.494
14	38.010	9.653	18.700	10.030	1.543	1.757	2.980	4.659	2.001	5.374	8.649	10.700
15	83.140	7.261	96.970	19.880	1.390	1.481	3.162	19.760	1.767	40.400	12.420	6.945
16	34.300	8.096	36.610	22.410	1.357	1.299	3.110	75.290	1.990	14.370	46.650	5.397
17	32.950	33.790	13.070	31.520	1.213	1.188	2.322	50.830	7.235	36.040	41.220	4.506
18	26.530	28.930	8.782	24.760	1.083	6.788	1.926	15.630	100.100	16.820	103.500	3.744
19	26.890	105.500	14.860	21.970	1.008	5.727	1.702	15.660	60.270	8.005	75.630	13.900
20	90.750	47.600	23.360	10.070	0.956	3.524	1.569	17.110	82.550	5.494	80.850	44.920
21	24.540	33.100	25.360	6.107	0.938	2.291	1.356	7.883	96.870	4.286	22.810	18.030
22	30.850	45.560	40.870	4.596	1.024	3.062	1.195	5.733	24.620	3.481	9.659	19.920
23	21.690	19.700	104.400	3.800	2.271	62.530	1.052	4.061	18.200	2.955	6.976	30.730
24	11.100	13.500	42.800	3.434	3.457	17.540	0.952	3.803	16.730	2.627	11.120	17.610
25	8.210	15.350	21.500	3.579	2.892	12.030	0.895	2.960	9.310	2.381	8.901	26.570
26	6.311	15.520	12.240	3.813	1.873	5.939	0.837	6.996	5.903	2.295	5.520	35.390
27	7.491	26.440	8.380	3.665	1.376	4.895	0.753	6.965	21.790	3.054	4.627	13.590
28	6.408	17.840	7.045	4.722	1.168	4.981	0.704	3.865	104.600	83.640	8.124	38.160
29	18.280		4.995	4.174	1.131	5.195	0.681	2.774	21.860	31.830	8.170	13.030
30	29.930		5.494	3.010	1.211	17.410	0.698	2.563	12.040	9.318	5.812	8.912
31	19.090		4.537		1.121		0.711	4.841		6.787		7.007
Average	20.480	29.720	48.340	11.350	4.239	12.550	10.370	10.820	24.280	24.550	18.110	20.960
Lowest	1.686	7.261	4.537	3.010	0.938	1.188	0.681	0.740	1.767	2.295	2.572	3.744
Highest	90.750	105.500	303.900	31.520	35.370	82.460	78.950	75.290	104.600	93.410	103.500	133.500
Peak flow	199.80	180.10	653.20	55.19	62.45	176.30	144.90	122.10	274.00	299.00	166.70	372.80
Day of peak	15	19	10	4	6	7	9	16	18	28	18	11
Monthly total (million cu m)	54.87	71.91	129.50	29.42	11.35	32.54	27.79	28.98	62.93	65.75	46.93	56.13
Runoff (mm)	166	217	391	89	34	98	84	88	190	199	142	170
Rainfall (mm)	245	282	436	131	65	167	97	171	247	244	167	241

Statistics of monthly data for previous record (Nov 1977 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	25.680	17.590	21.190	9.219	6.210	5.888	7.659	11.020	20.430	24.090	25.670	23.890
	Low	13.550	2.376	6.649	5.445	1.087	0.752	2.854	2.332	7.292	7.329	10.050	8.246
	(year)	1985	1986	1980	1980	1980	1982	1978	1984	1989	1979	1989	1977
	High	43.980	39.930	40.740	17.710	14.380	14.140	15.690	22.590	31.870	41.100	49.380	38.210
	(year)	1983	1989	1983	1979	1982	1980	1979	1985	1981	1980	1981	1980
Runoff	Avg	208	130	172	72	50	46	62	89	160	195	201	193
	Low	110	17	54	43	9	6	23	19	57	59	79	67
	High	356	292	330	139	116	111	127	183	250	333	387	309
Rainfall	Avg	235	132	196	84	81	95	110	142	212	237	242	223
	Low	113	21	76	50	29	44	60	52	86	96	85	82
	High	408	423	308	151	167	176	169	249	326	401	458	361

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	19.600		16.550		118
Lowest yearly mean			12.970	1987	
Highest yearly mean			20.250	1981	
Lowest monthly mean	4.239	May	0.752	Jun 1982	
Highest monthly mean	48.340	Mar	49.380	Nov 1981	
Lowest daily mean	0.681	29 Jul	0.353	26 Jun 1982	
Highest daily mean	303.900	10 Mar	404.800	29 Jan 1982	
Peak	653.200	10 Mar	847.500	6 Oct 1978	
10% exceedance	45.760		39.700		115
50% exceedance	9.635		8.648		111
95% exceedance	1.109		1.084		102
Annual total (million cu m)	618.10		522.20		118
Annual runoff (mm)	1869		1579		118
Annual rainfall (mm)	2493		1989		125
[1941-70 rainfall average (mm)			1966]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

40m wide river section. Flows fully contained except in exceptional circumstances (e.g. October 1978). Construction of gabion groynes immediately downstream, in February 1986, has rendered the low flow rating less stable. 100% natural flow regime with little loch storage. Catchment is typical Highland mix of rough grazing and moorland with some afforestation in the middle reaches.

008006 Spey at Boat o Brig 1990

Measuring authority: NERPB
First year: 1952
Grid reference: 38 (NJ) 318 518
Level stn (m OD): 43.10
Catchment area (sq km): 2861.2
Max alt (m OD): 1309

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	27.450	114.000	94.580	62.340	38 940	23.250	189 100	17.810	26 420	56 670	77.550	62 820
2	26.340	112.700	79 920	72.130	41 500	24 320	155.500	17.290	26.580	54.170	162 000	98 700
3	25 460	109.300	101 000	69 500	39 380	23 240	78 140	16 850	25 540	91 470	177.800	95 640
4	25.400	267.900	169.200	61.290	35 970	27 550	55.020	16.780	23.980	64 040	119 900	71.770
5	25.820	464.300	249.500	70 630	33 930	26.450	74.120	17.850	23.000	53 130	101 500	60 110
6	30.950	608.000	400 900	81.200	34 040	27 870	67.950	18.980	28.460	263 500	80 000	55 080
7	33.470	452.300	398.400	75 710	40.930	197.700	52.670	18.360	79 190	204.100	65 550	63 500
8	31.920	250 600	363 100	65 650	41.580	81.530	48 640	17 980	51.950	109 900	58 070	55.210
9	33.690	186 800	243 300	60.020	37.370	67.090	57.660	18.600	38 700	81 990	53 360	55 400
10	61.740	178.500	244 800	59 580	48.120	51 710	69.340	19.170	31.850	75.930	50 610	54 180
11	68.950	180.800	252 600	59 080	41 870	42 410	49 090	18 060	28.070	70.320	48.520	111.500
12	68.060	122 600	246 200	54 000	35 900	36 770	40 320	19 590	25 860	63 730	48 510	116.700
13	53.270	95 040	189.300	49 690	32 440	32.890	35 480	21.290	24.410	55 890	55.910	74 670
14	44.230	79.030	148 700	47 550	29 960	30 040	31.920	20 610	23.080	49 160	56 040	61.500
15	55 560	66.680	179 300	46 000	28 660	27 700	31 890	23 200	22.020	49 130	51 790	57 460
16	91.730	57.880	262.700	45 000	28.270	25.630	33.580	141.500	21 040	64 770	49 570	57.950
17	126.200	67.200	269 400	45.130	27 390	24 190	29 090	90 680	20.520	58.550	53 170	62 480
18	101.000	92.660	214 600	42 710	26 280	23 540	26 750	57 680	20.340	59 980	94 120	54 810
19	110.800	252.200	191.000	41.510	25.210	24 070	25 160	45 880	26 620	50 710	85 630	49 430
20	126.300	252.700	154.900	46 210	24 810	23 360	23 880	59.490	35.790	46 620	94 070	61 810
21	158 600	212.700	158 000	43.580	24.520	23 040	23.080	42.810	56 820	47 680	116 500	85 620
22	172.900	212 100	174 000	43 680	24 640	24.150	22 160	34.580	48.260	42.730	77.220	147.100
23	190 000	221.000	147.600	50 560	24 500	25.390	21.370	29 940	78 320	39 090	61 810	152 400
24	132.900	269.600	161.900	47.580	25 130	24.480	20 720	27.200	132.200	36 950	81 280	132 600
25	92.650	237.400	149 000	43.910	25 090	23 430	20.130	25.120	79.720	36.830	95 110	102 300
26	67.840	195.500	119 000	44.620	23.690	22.850	19.150	23.900	56.670	37 040	87 870	98.720
27	61.260	157.400	104 800	41 400	23.020	38 860	18 600	23.470	44.930	48.730	71.320	98 600
28	56.420	118 600	89.300	37.720	21 870	55.260	18 400	23.230	38 530	253 400	58.700	108 600
29	61.100		72.400	38 270	22 260	36 520	18 150	22.670	37 440	179.100	74.530	113.900
30	141.400		71.780	40.370	23.180	45.370	18.290	24.090	55.700	85.920	80 740	85.250
31	161.000		69 930		22 490		18 190	24 500		65.250		71 420
Average	79.490	200.500	186.200	52.890	30 740	38 690	44 950	31 590	41 070	80 530	79 620	83 140
Lowest	25.400	57.880	69 930	37.720	21 870	22 850	18.150	16.780	20 340	36 830	48.510	49 430
Highest	190 000	606.000	400.900	81.200	48 120	197.700	189.100	141.500	132.200	263.500	177 800	152 400
Peak flow	226.50	649 00	429.60	85 59	50 73	308 80	247 10	212.90	158 20	534 40	226 80	188 40
Day of peak	23	6	6	6	10	7	1	16	23	28	3	11
Monthly total (million cu m)	212 90	485 00	498 60	137.10	82 33	100 30	120 40	84.60	106 40	215.70	206 40	222.70
Runoff (mm)	74	170	174	48	29	35	42	30	37	75	72	78
Rainfall (mm)	158	207	173	68	40	108	47	88	87	129	100	156

Statistics of monthly data for previous record (Oct 1952 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	84.550	71 340	76.160	69.940	59 230	42.160	39.570	49 000	49.710	68 100	74 950	85 420
	Low	41.080	26.470	35.760	33.580	26.910	17.900	17.910	11 310	14 090	13.350	30 130	31 230
	(year)	1979	1963	1964	1974	1960	1961	1984	1955	1972	1972	1958	1989
	High	145.900	159 100	145 300	135 200	103 400	103 000	79 860	119 600	105.500	153 900	147 000	198 600
	(year)	1983	1962	1978	1979	1968	1966	1980	1956	1965	1981	1984	1954
Runoff:	Avg.	79	61	71	63	55	38	37	46	45	64	68	80
	Low	38	22	33	30	25	16	17	11	13	12	27	29
	High	137	135	136	122	97	93	75	112	96	144	133	186
Rainfall:	Avg.	109	74	84	63	77	73	87	99	96	115	111	116
	Low	38	28	29	19	24	23	20	21	21	30	30	46
	High	185	212	179	128	146	181	158	188	178	205	213	211

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	78.400		64 180		122
Lowest yearly mean			44.200	1972	
Highest yearly mean			82 810	1954	
Lowest monthly mean	30.740	May	11.310	Aug 1955	
Highest monthly mean	200 500	Feb	198 600	Dec 1954	
Lowest daily mean	16.780	4 Aug	9.311	16 Aug 1955	
Highest daily mean	606 000	6 Feb	1089.000	17 Aug 1970	
Peak	649 000	6 Feb	1675 000	17 Aug 1970	
10% exceedance	176 500		119 900		147
50% exceedance	54.340		49 870		109
95% exceedance	19.810		19 340		102
Annual total (million cu m)	2472 00		2025 00		122
Annual runoff (mm)	864		708		122
Annual rainfall (mm)	1359		1104		123
(1941-70 rainfall average (mm)			1184)		

Factors affecting flow regime

- Regulation for HEP.

Station and catchment description

Lowest station currently operating on the Spey. Cableway rated 65m wide section with natural control, (limited stability) extreme floods bypass station on left bank. 380 sq. km. developed for hydro-power with diversions and storage. Mainly granites and Moinian metamorphics. Some Dalradian and a little Old Red Sandstone. Mountain (includes all northern slopes of Cairngorms) moorland, hill grazing and some arable. Forestry.

012001 Dee at Woodend 1990

Measuring authority: NERPB
First year: 1929
Grid reference: 37 (NO) 635 956
Level stn (m OD): 70.50
Catchment area (sq km): 1370.0
Max alt (m OD): 1310

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	16.310	63.370	42.270	28.470	19.770	11.020	113.100	7.924	10.610	18.420	37.800	23.490
2	16.140	66.750	37.850	42.150	22.540	11.880	66.630	7.499	10.900	50.130	61.720	37.870
3	15.970	53.160	47.370	32.170	20.860	10.850	34.840	7.209	10.400	58.650	85.330	43.530
4	20.790	363.400	76.110	28.050	18.630	12.940	27.230	7.041	9.199	32.790	55.750	29.690
5	20.140	346.700	108.000	30.770	17.690	13.190	37.540	7.227	8.904	26.810	43.800	25.380
6	34.640	277.200	158.500	34.290	16.720	24.810	35.490	8.665	18.580	160.400	37.010	22.950
7	28.060	150.300	120.800	30.580	18.080	94.570	29.140	8.917	41.400	90.260	32.440	26.880
8	24.590	82.610	68.740	25.910	19.070	32.500	26.450	7.924	22.020	45.000	29.990	18.640
9	25.950	65.340	50.060	24.870	20.610	30.540	35.320	8.038	16.660	36.540	28.130	23.820
10	57.630	81.190	68.760	24.340	29.620	23.310	32.170	8.429	13.890	31.990	26.280	25.630
11	44.780	68.950	96.860	24.710	24.410	18.850	23.490	7.708	12.230	27.680	25.890	42.790
12	45.330	49.420	63.540	23.790	19.040	16.110	20.210	7.843	11.020	28.560	25.360	48.510
13	30.690	42.400	54.320	22.820	16.740	14.330	17.860	8.483	10.130	24.260	34.790	28.460
14	26.800	37.110	53.780	22.310	15.250	13.200	16.270	8.072	9.265	20.990	33.840	24.960
15	31.720	32.470	83.570	20.940	14.480	12.360	15.660	9.058	8.776	34.330	28.800	22.970
16	48.900	29.070	116.200	18.980	14.890	11.400	16.580	52.230	8.434	41.320	26.880	24.840
17	61.490	39.860	75.570	17.370	14.390	10.700	14.190	30.550	8.244	27.970	26.720	30.790
18	37.460	48.290	66.950	16.550	13.180	10.550	12.620	21.580	7.927	27.090	32.470	25.550
19	70.730	173.200	79.880	16.810	12.210	12.720	11.640	16.360	10.640	22.070	27.150	22.010
20	65.010	138.400	51.900	18.710	11.930	11.520	11.140	23.450	10.690	33.510	23.010	26.910
21	80.530	79.000	70.120	17.150	12.090	10.450	11.950	16.330	24.220	45.410	23.770	36.510
22	75.490	88.590	61.770	16.730	12.240	10.710	10.910	13.750	15.210	29.300	19.910	111.000
23	103.200	99.580	45.110	21.150	11.740	10.590	10.110	11.910	20.250	24.160	19.020	112.900
24	44.730	141.900	57.350	19.060	12.280	10.400	9.456	10.900	46.480	22.210	24.850	63.110
25	35.510	111.600	41.180	19.230	12.070	11.120	8.988	9.887	29.620	27.270	39.900	63.660
26	30.220	79.980	37.980	21.400	10.890	10.270	8.564	9.320	22.020	31.540	40.060	52.920
27	31.100	57.560	38.930	18.780	10.060	20.530	8.227	9.487	17.990	60.660	28.860	42.660
28	28.030	49.300	34.280	17.130	9.807	21.710	8.214	9.006	16.020	103.800	23.270	66.680
29	41.180		29.360	18.160	10.420	15.080	8.224	8.660	14.660	79.180	28.790	53.510
30	128.400		31.650	19.910	11.780	27.210	8.508	10.660	16.850	45.880	31.830	38.360
31	94.420		31.400		11.250		8.957	9.825		43.960		33.550
Average	45.680	104.200	64.520	23.110	15.640	18.180	22.570	12.390	16.110	43.620	33.450	40.340
Lowest	15.970	29.070	29.360	16.550	9.807	10.270	8.214	7.041	7.927	18.420	19.020	18.640
Highest	128.400	363.400	158.500	42.150	29.620	94.570	113.100	52.230	46.480	160.400	85.330	112.900
Peak flow	186.20	619.30	181.40	56.26	31.78	181.00	166.20	123.40	84.40	254.50	108.40	173.70
Day of peak	23	4	6	2	10	7	1	16	6	6	3	23
Monthly total (million cu m)	122.30	252.00	172.80	59.90	41.88	47.12	60.45	33.17	41.75	116.80	86.70	108.00
Runoff (mm)	89	184	126	44	31	34	44	24	30	85	63	79
Rainfall (mm)	165	216	85	47	46	98	37	58	59	130	77	112

Statistics of monthly data for previous record (Oct 1929 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	47.400	39.990	43.010	45.150	36.250	22.360	18.400	22.450	25.960	39.440	46.410	48.660
	Low	15.450	13.420	15.160	11.380	12.130	7.340	6.851	5.141	6.491	6.798	12.230	22.020
	(year)	1940	1947	1973	1938	1946	1940	1989	1984	1972	1972	1983	1976
	High	127.800	90.110	88.680	113.300	85.950	56.080	36.710	63.850	71.830	138.200	127.500	108.400
	(year)	1937	1945	1977	1947	1986	1948	1958	1948	1930	1982	1984	1954
Runoff:	Avg	93	71	84	85	71	42	36	44	49	77	88	95
	Low	30	24	30	22	24	14	13	10	12	13	23	43
	High	250	159	173	214	168	106	72	125	136	270	241	212
Rainfall:	Avg	119	77	78	69	80	67	89	95	94	119	113	118
	Low	36	10	16	12	21	16	22	13	13	8	22	43
	High	374	155	175	196	179	160	206	185	227	310	320	282

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	36.240		36.280		100
Lowest yearly mean			24.190	1973	
Highest yearly mean			49.050	1982	
Lowest monthly mean	12.390	Aug	5.141	Aug 1984	
Highest monthly mean	104.200	Feb	138.200	Oct 1982	
Lowest daily mean	7.041	4 Aug	3.536	27 Aug 1976	
Highest daily mean	363.400	4 Feb	648.500	24 Jan 1937	
Peak	619.300	4 Feb	1133.000	24 Jan 1937	
10% exceedance	74.420		72.500		103
50% exceedance	25.290		25.690		98
95% exceedance	8.509		8.351		102
Annual total (million cu m)	1143.00		1145.00		100
Annual runoff (mm)	834		836		100
Annual rainfall (mm)	1130		1118		101
[1941-70 rainfall average (mm)			1194]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Cableway rated, fairly stable natural control. Present station, built in 1972, replaced earlier station (flow records from 1929, chart records from 1934) on same reach (Cairnton; c/m measurements at Woodend) - established by Capt. McClean. Earlier staff gauge record dates from 1911. No regulation, little natural storage, minor abstractions. Dalradian and Moinian metamorphic along most of the valley, flanked by igneous intrusive. Mountain, moorland, forestry, pastoral and some arable in the valley bottom.

015006 Tay at Ballathie 1990

Measuring authority: TRPB
First year: 1952
Grid reference: 37 (NO) 147 367
Level stn. (m OD): 26.30
Catchment area (sq km): 4587.1
Max alt. (m OD): 1214

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	98.620	548.500	380 900	206 700	109.400	45.330	227.700	46.740	69 590	80.770	200 900	96.440
2	98.460	627.300	323.200	222.500	107 000	47.600	131.300	46 080	66.820	201.700	200 000	93.640
3	124.400	585 400	387 300	188 100	102 800	46 450	119 300	45.580	71 480	237 200	178 600	118.700
4	131.600	1104 000	505 500	217.000	96 310	46.830	95 360	45 200	66 820	177 000	171.100	104 000
5	124.500	1647.000	670.300	208.400	91.860	45.590	97.270	44 620	61 340	188.700	161.900	114 500
6	167 600	1389 000	1033 000	206.100	88.460	144 800	93 770	43 460	88 010	422 700	122 100	102 800
7	157 100	1072.000	1033 000	169.100	96 390	234 200	86.840	43.270	106 300	344 000	113.100	113 100
8	154.600	708.700	801.800	153 600	98 060	101.400	87 710	42.930	82 540	264 900	111 600	93 030
9	183.300	601.400	587.400	154.400	119.400	83.870	91.930	42 610	74 940	240 600	107 000	93 110
10	329.900	632.500	676.100	149 900	119 200	71.210	91.110	43.030	72.030	235.100	117.300	101.200
11	303 000	535.600	846.600	165.800	108 100	65.160	93 830	46.760	66.940	214 400	118.600	122 800
12	289.600	440 300	656 800	160 400	105.400	63 600	88.570	49.250	63 600	225 000	118.800	134 200
13	274 400	382 000	675.600	174.600	91.520	59 000	82.860	54 500	56 800	203 800	112.100	106 900
14	283.800	338 800	475.000	163.400	91.180	57.100	78 820	51 880	54.500	153 400	107.700	101.900
15	353.700	263 300	675 400	155 700	93 020	56 010	77.050	58 680	52 650	213 100	98.720	90.710
16	434.000	243.300	848.000	162 400	97 760	54.720	80 590	81.310	52.010	196 900	104 100	78.650
17	499 900	326 900	665 300	147.100	101 500	53 170	80 910	74 320	51 130	191 400	136.400	99.510
18	419.900	411 400	538 400	145.500	94 460	53.680	76 040	67.650	56 450	192 200	181 000	87.150
19	512.400	790.500	528.300	157.200	65.840	57.180	69.800	66 780	81.630	192.700	195.700	88 910
20	516.700	815.900	444.500	155.700	62 130	56.560	64 400	70.670	96 650	183.000	190.900	99 220
21	494.200	635 300	610.100	144 000	59 300	67.120	60 290	67.430	112.100	203.000	167 900	110 000
22	497.600	649.600	562.600	147.000	58.410	69.720	57.010	63.770	100.500	187.300	144.900	239 900
23	861.700	633.800	525.300	155.100	57.210	65.120	54.520	61.370	79.910	160 600	112.900	345 400
24	488.400	764.000	576 600	141.600	57 230	57 460	52 860	60.740	89.840	133 200	127.300	301 400
25	413 600	669.200	400 800	131.600	59.620	60.760	50.680	58.220	85.360	138.900	137.200	384 300
26	361.100	679 900	346 300	136.100	61 080	56 010	48 240	54 370	82.280	134 600	152 500	415 600
27	336 800	554.100	327 600	119.200	51 080	87 520	49 300	54.320	67.580	256 800	138.000	373 700
28	312.200	458 000	285.600	115 300	48 090	74 790	48.780	53 470	66 510	230 500	125 800	443 100
29	400 800		263 000	107 400	48 430	65 130	47.170	58 080	65 380	225 200	115.900	396 000
30	663.200		238.200	110.600	48 300	109.000	49.650	74.310	75.460	208.400	115.200	325 000
31	617.200		211.900		47 310		48.610	65 800		227 300		294 200
Average	345.300	661 000	551.600	159.000	81.800	71.870	80 070	56 040	73 900	208.500	139 400	182 900
Lowest	98.460	243.300	211 900	107 400	47.310	45 330	47.170	42.610	51 130	80.770	98.720	78.650
Highest	663.200	1647 000	1033.000	222 500	119.400	234.200	227 700	81.310	112.100	422.700	200.900	443.100
Peak flow	776 40	1746 00	1102 00	251.60	136 60	496.30	296 50	83 61	194.70	596.70	212.80	535.00
Day of peak	30	5	6	2	9	6	1	16	6	6	1	28
Monthly total (million cu m)	924.80	1599 00	1477.00	412.30	219 10	186.30	214 50	150 10	191.60	558.50	361.40	489.80
Runoff (mm)	202	349	322	90	48	41	47	33	42	122	79	107
Rainfall (mm)	302	353	251	84	40	118	47	79	77	194	69	193

Statistics of monthly data for previous record (Oct 1952 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	241 300	206 000	207 300	147 000	120 200	79 830	67 820	89 140	125 300	190 900	212 900	242 200
	Low	92.900	52 560	69 380	75 210	45 500	42 080	31 390	14 700	40 660	39 690	89 160	110 500
	(year)	1963	1963	1953	1974	1980	1957	1984	1955	1955	1972	1972	1989
	High	515 800	405 100	424.800	231.200	321 100	190 400	129 600	286.100	283.900	390.500	407.700	491 400
	(year)	1974	1989	1967	1960	1988	1966	1988	1985	1985	1982	1984	1954
Runoff:	Avg.	141	110	121	83	70	45	40	52	71	111	120	141
	Low	54	28	41	43	27	24	18	9	23	23	50	65
	High	301	214	248	131	188	108	76	167	160	228	230	287
Rainfall:	Avg.	157	104	122	71	97	82	94	110	132	152	144	167
	Low	33	29	39	10	26	23	21	14	11	63	38	64
	High	393	275	224	150	214	181	219	250	266	269	311	304

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	215.100		160 700		134
Lowest yearly mean			107.300	1955	
Highest yearly mean			207.900	1954	
Lowest monthly mean	56 040	Aug	14 700	Aug 1955	
Highest monthly mean	661 000	Feb	515 800	Jan 1974	
Lowest daily mean	42 610	9 Aug	11 460	6 Aug 1955	
Highest daily mean	1647 000	5 Feb	1223.000	27 Nov 1954	
Peak	1746 000	5 Feb	1570 000	30 Jan 1974	
10% exceedance	546 600		314 500		174
50% exceedance	118.500		129 300		92
95% exceedance	47 970		43 090		111
Annual total (million cu m)	6783 00		5071 00		134
Annual runoff (mm)	1479		1106		134
Annual rainfall (mm)	1807		1432		126
[1941-70 rainfall average (mm)			1443]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Regulation for HEP.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Velocity-area station with cableway. 90m wide. The most d/s station on the Tay, records highest mean flow in UK. Since end of 1957, 1980 sq. km (43%) controlled for HEP; there was some control prior to this. 73 sq. km controlled for water supply. Catchment is mostly steep, comprising mountains and moorland; exceptions are lower valleys. Mainly rough grazing and forestry. Geology, mainly metamorphics and granite, but lower 20% (Isla valley) is Old Red Sandstone

019001 Almond at Craigiehall 1990

Measuring authority: FRPB
First year: 1957
Grid reference: 36 (NT) 165 752
Level stn. (m OD): 22.90
Catchment area (sq km): 369.0
Max alt. (m OD): 518

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.942	17.800	12.150	3.150	1.890	2.181	15.640	1.125	1.320	1.986	6.573	2.901
2	3.016	14.270	9.305	5.659	1.735	1.701	4.867	1.178	1.317	3.787	4.520	2.642
3	9.566	9.831	9.354	4.085	1.762	1.530	2.868	1.388	1.569	14.770	3.207	2.529
4	9.785	58.700	9.731	3.200	1.755	1.572	15.430	1.280	1.439	5.679	2.543	2.225
5	6.332	20.180	13.030	2.986	1.724	1.662	15.490	1.238	1.408	8.156	2.280	2.059
6	5.793	15.520	19.160	2.955	1.602	3.187	5.057	1.474	1.651	147.200	2.050	3.314
7	6.845	11.830	13.420	2.795	1.967	3.360	4.481	1.487	1.783	32.640	2.088	17.130
8	5.995	11.240	20.210	2.548	2.454	2.964	5.322	1.374	1.433	11.060	1.977	8.418
9	6.668	11.050	30.870	2.559	3.911	3.563	3.759	1.791	1.285	7.400	1.851	16.900
10	28.620	8.832	33.320	2.738	3.830	2.636	2.800	1.411	1.304	7.029	1.940	10.080
11	11.940	11.320	13.310	2.509	2.827	2.282	2.314	1.188	1.262	7.862	1.892	17.320
12	8.654	15.270	8.677	2.278	2.175	2.071	1.899	1.191	1.292	7.144	2.137	10.100
13	6.875	16.390	7.397	2.260	1.936	1.938	1.683	1.518	1.240	4.779	2.423	5.532
14	11.190	14.290	6.806	2.192	1.917	1.950	1.417	1.412	1.172	3.669	2.298	4.279
15	19.680	12.760	19.090	2.277	2.664	1.943	1.908	3.706	1.123	5.307	2.261	3.898
16	24.720	9.680	9.387	2.818	3.025	1.892	1.921	8.734	1.142	9.785	5.471	3.591
17	24.710	50.820	6.534	3.684	3.951	1.930	1.432	3.787	1.261	5.529	5.207	3.290
18	23.420	23.520	5.628	3.685	2.439	2.101	1.316	2.209	1.916	5.363	6.816	2.823
19	50.940	22.410	5.739	4.567	2.019	2.185	1.222	1.980	2.130	4.445	5.017	2.423
20	24.930	14.420	4.672	5.277	1.824	2.381	1.167	1.733	1.752	3.945	4.043	5.464
21	12.790	15.150	8.709	3.825	1.852	2.379	1.104	1.406	2.205	3.121	4.218	5.491
22	16.820	10.290	6.565	3.064	1.850	3.188	1.052	1.390	1.605	2.630	3.193	56.720
23	27.040	17.750	6.481	2.701	1.782	2.162	1.046	1.343	1.391	2.343	2.708	39.120
24	16.940	74.170	8.886	2.526	1.576	2.107	1.084	1.512	4.299	2.147	3.117	14.460
25	34.650	41.660	6.862	2.276	1.316	1.997	1.068	1.494	3.537	2.070	30.520	20.550
26	29.640	40.480	4.777	2.321	1.255	2.054	1.077	1.394	2.084	2.096	16.790	33.770
27	28.260	27.440	4.298	2.041	1.210	2.779	1.147	1.363	1.616	2.193	7.844	16.380
28	17.030	19.300	3.673	1.922	1.234	2.193	1.077	1.359	1.413	20.780	5.381	47.010
29	49.840		3.325	1.796	1.509	2.713	1.009	1.479	1.406	16.260	4.207	22.090
30	39.850		2.978	1.817	1.618	7.649	1.013	1.509	2.527	24.930	3.444	13.100
31	22.450		2.788		1.495		1.035	1.373		11.350		10.770
Average	18.970	22.010	10.230	2.950	2.068	2.475	3.345	1.833	1.696	12.500	4.934	13.110
Lowest	2.942	8.832	2.788	1.796	1.210	1.530	1.009	1.125	1.123	1.986	1.851	2.059
Highest	50.940	74.170	33.320	5.659	3.951	7.649	15.640	8.734	4.299	147.200	30.520	56.720
Peak flow	72.53	122.40	61.12	6.83	6.66	19.62	41.16	11.27	6.51	220.00	42.31	97.81
Day of peak	29	24	10	2	9	30	4	16	24	6	25	22
Monthly total (million cu m)	50.80	53.25	27.40	7.65	5.54	6.41	8.96	4.91	4.40	33.48	12.79	35.11
Runoff (mm)	138	144	74	21	15	17	24	13	12	91	35	95
Rainfall (mm)	178	167	93	45	41	96	51	70	56	174	51	127

Statistics of monthly data for previous record (Jan 1957 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	9.331	7.471	6.556	4.322	3.127	2.418	2.337	3.215	4.573	6.293	9.044	9.168
	Low	3.574	1.782	1.918	1.410	1.091	0.817	0.950	0.869	0.668	0.668	1.862	3.016
	(year)	1963	1963	1973	1974	1961	1961	1960	1983	1959	1972	1972	1975
	High	16.300	15.450	14.300	9.840	11.170	8.572	9.223	8.568	20.360	15.120	21.860	19.860
	(year)	1984	1984	1979	1986	1968	1966	1958	1985	1985	1981	1963	1986
Runoff	Avg.	68	49	48	30	23	17	17	23	32	46	64	67
	Low	26	12	14	10	8	6	7	6	5	5	13	22
	High	118	105	104	69	81	60	67	62	143	110	152	144
Rainfall	Avg	80	56	68	51	61	60	73	85	88	88	90	86
	Low	28	17	22	8	16	15	17	19	14	23	19	21
	High	145	107	127	89	123	136	173	142	195	177	190	179

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	7.949		5.647		141
Lowest yearly mean			2.890	1973	
Highest yearly mean			8.199	1986	
Lowest monthly mean	1.696	Sep	0.668	Oct 1972	
Highest monthly mean	22.010	Feb	21.660	Nov 1963	
Lowest daily mean	1.009	29 Jul	0.241	9 Oct 1959	
Highest daily mean	147.200	6 Oct	142.300	21 Sep 1985	
Peak	220.000	6 Oct	199.600	3 Nov 1984	
10% exceedance	19.740		12.830		154
50% exceedance	3.040		2.875		106
95% exceedance	1.197		0.884		135
Annual total (million cu m)	250.70		178.20		141
Annual runoff (mm)	679		483		141
Annual rainfall (mm)	1149		886		130
[1941-70 rainfall average (mm)			909]		

Factors affecting flow regime

- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from effluent returns.

Station and catchment description

The recorder is well sited on a straight even reach with steep banks which have contained all recorded floods. Stable rating over the period of record. Weed growth in summer - some adjustment to stage is required. Low flows substantially affected by sewage effluent especially from Mid Calder. Abstraction at Almondell to feed a canal. A number of storage reservoirs are situated in the catchment. Geology - predominantly Carboniferous rocks. Land use - mainly rural. Livingston new town and several small mining towns in catchment.

021009 Tweed at Norham 1990

Measuring authority: TWRP
First year: 1962
Grid reference: 36 (NT) 898 477
Level stn. (m OD): 4.30
Catchment area (sq km): 4390.0
Max alt (m OD): 839

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	50 250	322.500	182 800	36 340	18.870	17.120	122.500	15 900	15 880	24.340	88.980	53.740
2	49.670	241.600	147.700	37 600	17 990	19.690	62 470	15 610	15.020	22 810	77 980	49.420
3	57 620	171.500	137.500	40.800	18 050	18 430	38.470	16.370	14 640	211 700	68 380	46 520
4	58.510	459 300	165 800	35 820	19 360	16.440	35 300	14 690	15 070	82 070	61.090	42.750
5	52.160	443.300	131.100	32 870	17 310	16 070	115 300	14 330	15 060	73.210	61 270	39 900
6	61 910	254.800	136.600	32 820	16.750	17 330	59 380	14 600	18 420	445 200	59.110	38 510
7	68.250	237.000	134.700	33.790	16 420	38 400	44 680	14 870	24 100	405 500	53.160	78 980
8	73.440	278 300	135.600	30 480	19 530	30 230	48.610	15 210	19 900	167.600	49.620	112.700
9	83.480	211 300	199 800	28.490	20.870	27.570	40 470	16.470	16 470	117 200	45.930	270 300
10	129.400	173.700	198.900	27 800	23.900	27.310	36 290	16 720	15.100	95 860	43 440	209 200
11	119 800	177 300	153.100	27.710	29.980	22 520	30 370	14 880	14 400	97.500	43 510	236 800
12	106 900	198.700	123 400	26 080	23 780	21 940	28 590	13 610	13.950	94 910	41.410	264 700
13	84.330	170 000	108 400	25.190	20.120	19 340	26 940	13.930	14 360	72 580	40.560	147.400
14	80 480	169.200	99.220	26.900	18 650	18.640	25.400	15 210	17 130	63.720	45.190	113 300
15	110.300	147.600	105.400	30.750	18.890	17.790	24.060	15 590	15.270	65.050	40 640	99.730
16	222.900	124.200	103.000	28 430	24 230	16.810	28 090	28.280	14.510	110 200	43.870	106.000
17	198.300	337 300	87.480	29.510	59.330	16 060	25 130	33.180	14 500	83.950	62.180	103 300
18	151.700	353.100	75 080	29.580	34 070	15 750	21.780	20 530	14 720	70 690	52.990	86.780
19	288.400	422.400	66 440	30 130	25.520	15.440	20 450	17.730	16 740	63 070	60 020	76.100
20	186 600	357 700	59 780	33.380	21.930	15 670	19 140	16 800	24.260	65.700	50 510	113 700
21	154 000	246 000	61.500	29 680	20 060	17 590	18.390	15 730	21 080	60.090	46.700	127.900
22	254.700	186 400	60 110	27.360	19.310	20 370	17 820	14.530	19 390	51.230	45.800	255 800
23	424.800	167.800	53.400	25.690	18 640	22.900	18.140	14.700	16.960	46 000	42.860	384.200
24	217 600	407 000	57.090	23 810	18 070	18.730	18 280	14 820	25 220	42.770	41.610	235 900
25	279.900	373.800	59.140	22 200	18.280	17.740	16 450	17.310	70.670	41 320	71.400	346.800
26	251 300	475.800	50.980	22.110	16 660	17 590	16 870	17.240	33 170	40 290	138.100	530 000
27	212 700	320 500	46 950	24 190	15.850	16 510	17 230	15.720	25 370	44 750	107 600	358.300
28	169 500	248 200	44 450	22 240	15.520	20.580	15 850	14.730	21.650	117 500	82 140	505.700
29	238 400		41.500	20 410	15 290	20.340	15 820	14 960	20 040	184.200	67 820	387 700
30	446.200		39 170	19 820	15 160	21.840	15.770	16 620	20 580	113.600	59 890	216 000
31	435.300		37.550		17.230		18.030	16.850		122.200		179.800
Average	170 900	274.200	100.100	28 730	21 150	20 090	33 620	16 700	20 120	105.700	59.790	187.700
Lowest	49.670	124 200	37.550	19 820	15 160	15 440	15.770	13 610	13 950	22.810	40.560	38 510
Highest	446.200	475.800	199 800	40.800	59.330	38 400	122.500	33.180	70 670	445.200	138.100	530 000
Peak flow	602.60	810.20	257 90	42.35	77.50	51.69	163 40	44.72	106 40	810.80	154.40	835 80
Day of peak	23	4	9	2	17	7	1	17	25	6	26	28
Monthly total (million cu m)	457.80	663 20	268.20	74.47	56 65	52 08	90 03	44.73	52.15	283 10	155 00	502.70
Runoff (mm)	104	151	61	17	13	12	21	10	12	65	35	115
Rainfall (mm)	157	176	51	34	45	98	52	62	65	149	52	148

Statistics of monthly data for previous record (Oct 1962 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	123.600	100.900	103 600	69 880	55 760	37.010	32 990	45 150	54 890	79 410	108 400	113 100
	Low	50.320	37.180	26 290	25.190	17.950	15 550	11.650	9 881	10 990	10.170	24.710	40 690
	(year)	1973	1963	1973	1974	1980	1974	1984	1976	1972	1972	1973	1975
	High	249.700	173.300	236 400	142.200	153.300	66 200	85 330	146.300	179 900	176 300	271.700	197.900
	(year)	1982	1978	1963	1979	1967	1981	1985	1985	1985	1967	1963	1979
Runoff:	Avg.	75	56	63	41	34	22	20	28	32	48	64	69
	Low	31	20	16	15	11	9	7	6	6	6	15	25
	High	152	99	144	84	94	39	52	89	106	108	160	121
Rainfall:	Avg.	95	64	84	60	75	67	76	92	92	93	98	92
	Low	45	15	21	12	22	20	23	21	19	25	16	23
	High	165	125	138	98	181	129	186	188	164	163	224	175

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	85.620		76 990		111
Lowest yearly mean			33 920	1973	
Highest yearly mean			102 400	1963	
Lowest monthly mean	16 700	Aug	9.881	Aug 1976	
Highest monthly mean	274.200	Feb	271.700	Nov 1963	
Lowest daily mean	13 610	12 Aug	7.427	28 Aug 1976	
Highest daily mean	530 000	26 Dec	1138.000	4 Jan 1982	
Peak	835.800	28 Dec	1518 000	4 Jan 1982	
10% exceedance	237 800		163 700		145
50% exceedance	40.700		52 080		78
95% exceedance	14.930		14.260		105
Annual total (million cu m)	2700 00		2430 00		111
Annual runoff (mm)	615		553		111
Annual rainfall (mm)	1089		988		110
(1941-70 rainfall average (mm)			1009)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.

Station and catchment description

Lowest station on River Tweed. Velocity-area station at very wide natural section. Complex control. Moderate seasonal weed growth effects on rating. Reservoirs in headwaters have only a small impact on the flow regime - monthly naturalised flows available. Geology: mixed but principally impervious Palaeozoic formations. Moorland and hill pasture predominates; improved grasslands and arable farming below Melrose.

022001 Coquet at Morwick 1990

Measuring authority: NRA-N
First year: 1963
Grid reference: 46 (NU) 234 044
Level stn (m OD) 5.20
Catchment area (sq km) 569 8
Max alt. (m OD) 776

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	3 389	17 400	12 720	2 461	1.554	1 362	5.041	0 983	1 014	1 407	5 424	5.666
2	6 438	13 100	10.890	2 482	1 500	1 340	4.434	0 955	0.995	1.391	5.098	4 954
3	6 678	9 944	10 990	2 700	1 463	1.366	2 862	0.910	1.011	1 456	5 644	4 487
4	5 419	31 640	11 930	2.664	1 473	1 424	3.682	0 917	0 973	2 015	6 253	4 008
5	4 810	23 080	8.668	2 598	1 431	1 375	10 580	0 921	0 943	1 722	9 391	3.646
6	4 800	12 930	7 621	2 715	1 406	1.551	5.602	0 954	1 006	9.054	7.279	3 471
7	4 680	41.460	7 086	2 608	1.435	2 003	3 703	0 975	1.075	14 450	6 126	26 680
8	4.310	41 700	10 200	2.360	1.719	1 900	3 479	0.984	1.207	5 131	5 400	38.560
9	4.319	24 030	18 930	2.953	1 766	1.814	2.856	1.031	1 074	3 478	4.622	44 410
10	5 748	16 370	12.280	2 242	2 399	1 848	2.288	1 053	1.002	2.980	4 175	34 670
11	7.962	13.350	9.209	1 558	2 682	1.652	1 953	1 017	0 976	5.322	4 116	29 770
12	6 863	13 850	7.343	2 122	2 024	1 483	1 777	0 968	0 955	5 176	3 808	23 730
13	5 553	13.160	6 858	2.111	1.783	1 408	1 754	1 005	0 956	3 440	3 570	12 330
14	4.824	12 480	6 437	2 174	1 674	1.355	1 652	1 013	0 943	2.787	3.793	9.463
15	4 448	12.220	5.693	2 256	1 923	1 336	1 598	1 065	0 906	2 433	3 397	8.063
16	4.754	10 090	5.614	2.153	6 631	1 277	1 793	1.140	0 920	2 418	3 160	9 932
17	7.981	26.410	5 014	2.150	9.669	1 232	1 740	1.484	0 934	2.223	4 012	9.011
18	5.842	24 710	4 505	2 089	4 298	1 229	1.513	1 275	0 952	2.115	3 427	7 623
19	9 801	29.860	4 162	2 026	3.027	1 246	1 390	1.593	1 050	2.780	3.266	6 751
20	7.554	35 890	3 888	2.114	2 463	1.172	1 301	1 952	1 121	6 331	3 029	8 740
21	5.788	19 590	3 731	2.079	2 151	1 415	1 270	1 433	1 049	5 001	2 882	10.250
22	7 516	13 530	3 540	2 007	2 008	1.661	1.245	1.243	1 012	3 683	3.356	19 110
23	11.570	11.040	3 363	1.929	1 825	2 180	1 184	1.154	1 001	2 954	3 236	12 400
24	8.569	13 540	3.232	1 827	1 677	1 911	1 127	1.167	1.135	2.598	3.169	8.201
25	25.220	17 090	3 182	1.753	1 600	1.721	1.092	1.154	5 027	2.798	16.410	8 491
26	17.780	42 360	2.983	1.728	1 486	1 612	1.076	1.133	2 410	3 142	19 850	17 200
27	14.510	23 610	2 864	1.771	1 439	1 490	1 082	1 069	1 736	5.864	16 750	13.270
28	15 760	17 100	2.760	1 695	1 410	1.460	1.124	1 056	1 454	12.970	10.250	28 660
29	16 160		2 682	1 677	1 416	1 353	1.092	1 029	1.297	12.180	7 677	25 190
30	19 120		2 599	1 603	1.432	1 675	1 073	1 058	1 355	7 466	6 564	14.020
31	18 400		2 448		1.412		1 022	1.008		7.189		25 920
Average	8.921	20 770	6.562	2.153	2 264	1 528	2 367	1.119	1 250	4 644	6 171	15.440
Lowest	3.389	9 944	2 448	1 558	1 406	1 172	1.022	0 910	0 906	1.391	2 882	3.471
Highest	25 220	42.360	18 930	2 953	9 669	2 180	10 580	1 952	5.027	14 450	19 850	44 410
Peak flow	42.24	79 34	28.50	6.38	20 45	4.75	13 06	2.23	8 81	41.79	27 02	63 94
Day of peak	25	7	9	9	16	30	5	20	25	6	25	8
Monthly total (million cu m)	23 90	50.24	17.58	5 58	6 06	3 96	6 34	3.00	3 24	12 44	16 00	41 36
Runoff (mm)	42	88	31	10	11	7	11	5	6	22	28	73
Rainfall (mm)	94	126	25	23	55	71	39	49	49	111	65	122

Statistics of monthly data for previous record (Nov 1963 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	14 900	12.830	12 680	8 886	5 624	3 709	3 406	4 441	4 620	7 746	12 000	12 820
	Low	5 769	2.672	1 729	2 929	2.039	1.140	1.135	1.232	1 283	1 084	1 926	4 563
	(year)	1989	1973	1973	1974	1984	1970	1989	1983	1989	1972	1973	1971
	High	32 310	26 350	31.390	20 980	15 410	6 441	8 138	12.950	14.240	26 860	31 370	33 340
	(year)	1982	1978	1979	1987	1983	1987	1988	1986	1965	1976	1965	1978
Runoff:	Avg	70	55	60	40	26	17	16	21	21	36	55	60
	Low	25	11	8	13	10	5	5	6	6	5	9	21
	High	152	112	148	95	72	29	38	61	65	126	143	157
Rainfall (1966-1989)	Avg	88	59	79	56	65	58	67	77	76	76	85	82
	Low	29	15	18	8	18	8	13	18	15	19	19	31
	High	140	120	144	118	127	129	169	161	215	176	214	251

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	6 015		8.622		70
Lowest yearly mean			3 716	1973	
Highest yearly mean			11.380	1969	
Lowest monthly mean	1.119	Aug	1 084	Oct 1972	
Highest monthly mean	20 770	Feb	33.340	Dec 1978	
Lowest daily mean	0 906	15 Sep	0 721	20 Jun 1970	
Highest daily mean	44 410	9 Dec	203.200	3 Jan 1982	
Peak	79 340	7 Feb	289 700	4 Jan 1982	
10% exceedance	15.640		18 650		84
50% exceedance	2.773		4.929		56
95% exceedance	0 989		1.339		74
Annual total (million cu m)	189 70		272 10		70
Annual runoff (mm)	333		478		70
Annual rainfall (mm)	829		866		96
[1941-70 rainfall average (mm)			884]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with 34m wide concrete Flat V weir (informal design) made with pre-cast segments (installed 1973). Cableway. Fairly straight section with high banks. Replaced earlier station at Guyzance. Natural catchment.

023006 South Tyne at Featherstone 1990

Measuring authority: NRA-N
First year: 1986
Grid reference: 35 (NY) 672 611
Level stn. (m OD): 131.70
Catchment area (sq km): 321.9
Max alt. (m OD): 893

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4.754	37.220	12 400	2.529	2.607	1.549	9 370	1.147	3 768	3 838	9.026	4.556
2	6.984	25.260	11.630	2 603	2.294	1.611	6.567	1 081	2.807	9.716	6 706	4.149
3	7.291	20 090	53.190	2.814	2.130	1.622	4.103	1 040	3 369	29 090	5 465	4 052
4	5.465	91.750	46 890	2.634	2 032	4.135	19 170	1 031	2 211	15 040	4.882	3.859
5	5 416	25.590	27.370	3.711	1.915	3.982	13 620	1 076	2 247	28 650	4 626	3 635
6	13.270	35.190	16 660	6 863	1.821	7 268	4 996	1.131	9 036	83 440	4 434	5 857
7	10 400	72.300	11 830	3.731	1 878	7 084	10 320	1 143	6.413	15.260	4 388	10.580
8	8.543	30 280	26 940	2.762	1.955	9 236	7 998	1.112	3.221	8.252	3 935	8.943
9	7.229	13.720	48 350	2.485	2 100	5.835	8 913	1.527	2 332	12 250	3 596	9.905
10	21.330	12.270	27.640	3 212	7 685	3.942	5.766	1.315	1 935	13.190	3 619	15 330
11	23 510	15.740	11.360	2 941	9 058	2.855	3 994	1.164	1.720	34.410	4 619	60 100
12	11.670	13 620	8 050	3.111	4 095	2.393	3 365	1.109	1 597	9.911	3 923	21 810
13	7.713	29.360	7 064	4 716	3.095	2.112	2.739	1.180	1 518	6 643	5 833	9.804
14	15.050	20 210	5.962	6.347	2.576	1 962	2.307	1.173	1 444	5.280	10 130	7 016
15	18.740	12.250	5 332	8 083	9 226	1.827	2 304	1.325	1 370	6.162	7.565	5.963
16	45 420	9.176	5.957	11.930	14 860	1.717	2 506	12 220	1.353	7 728	54 820	8 871
17	16.600	62.850	4.701	12 460	9 946	1 616	1 977	5.341	1 562	5.168	18 620	7 012
18	13 390	33.470	4.193	15 280	5 182	1.547	1.760	3.095	19 840	6 039	19.590	5 582
19	45.870	128 600	4.028	10.780	3 702	1.552	1.627	5.112	13 890	10.030	11 330	5 436
20	11 010	51.230	3 638	8 419	2.961	1.458	1 558	3.360	30 470	13 850	8 458	69.960
21	29.280	28.350	3 617	6 516	2.582	1.628	1 507	2.317	10 270	7.444	6.793	32.190
22	38 860	12.780	3.318	5.087	2.352	4 798	1.426	2.369	5.706	5.370	6 319	47.960
23	42 830	9.984	3 225	3.997	2.118	8 271	1 373	2.148	4 642	4 532	5.119	26.100
24	15 350	40 880	4 011	3.244	1 955	5 123	1 330	1.863	14 900	4 347	5.665	16.950
25	76.680	41.680	4.332	2.941	1.835	3.415	1 268	1.781	8.595	4 674	24 360	56 810
26	18.340	31.920	3 898	13.790	1 751	2.374	1.225	1.511	4 873	8.598	20.120	50 890
27	12.280	26.250	3 382	5.377	1 674	2.175	1.258	1.374	3.708	5.127	9 137	17.300
28	10 690	18.730	3.122	3 991	1.624	2 056	1.350	1.310	3.279	63.150	6.384	79.590
29	60.250		2.976	3 412	1.597	1.802	1.272	1.327	3.302	28.990	5 305	17 960
30	60 410		2 828	2 965	1.661	8.583	1 346	1.376	5 122	42.930	5.007	10 490
31	47.230		2.657		1.558		1 249	2.009		17.270		26 800
Average	22.960	33.950	12 280	5 624	3.607	3 518	4 179	2.131	5 883	16 660	9.659	21.140
Lowest	4 754	9 176	2.657	2.485	1 558	1 458	1 225	1 031	1.353	3 838	3.596	3 635
Highest	76 680	128.600	53.190	15 280	14 860	9 236	19 170	12 220	30 470	83 440	54 820	79 590
Peak flow	189.60	216.60	158.20	30 15	28 80	19.73	65 70	21 43	84.76	191.70	164.30	220 00
Day of peak	25	19	9	18	15	8	4	16	20	28	16	28
Monthly total (million cu m)	61.50	82.13	32 88	14.58	9 66	9 12	11.19	5.71	15 25	44.61	25.04	56.63
Runoff (mm)	191	255	102	45	30	28	35	18	47	139	78	176
Rainfall (mm)	247	313	78	77	57	98	66	88	105	205	87	207

Statistics of monthly data for previous record (Oct 1966 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	15.810	11 840	13 810	8.844	6.090	5.066	5 278	6.937	9 424	12.640	15 270	15.330
	Low	7.738	3 380	5 861	1.851	1.312	1 465	1 123	0.980	1.467	1 182	6 616	5.110
	(year)	1985	1986	1975	1974	1980	1978	1989	1976	1972	1972	1983	1971
	High	25.510	19.760	30 210	16.210	13 850	12 740	17 170	19.240	23 670	30 330	24.670	28 810
	(year)	1975	1974	1979	1979	1983	1980	1988	1985	1985	1967	1984	1974
Runoff:	Avg.	132	90	115	71	51	41	44	58	76	105	123	128
	Low	64	25	49	15	11	12	9	8	12	10	53	43
	High	212	148	251	131	115	103	143	160	191	252	199	240
Rainfall:	Avg.	135	86	124	74	85	89	101	115	126	139	140	135
	Low	74	28	44	11	40	39	29	25	31	27	63	42
	High	213	169	200	133	178	215	253	248	239	331	245	253

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	11.680		10.530		111
Lowest yearly mean			7 629	1971	
Highest yearly mean			12.920	1979	
Lowest monthly mean	2 131	Aug	0 960	Aug 1976	
Highest monthly mean	33.950	Feb	30 330	Oct 1967	
Lowest daily mean	1.031	4 Aug	0 713	26 Aug 1976	
Highest daily mean	128 600	19 Feb	177.200	21 Sep 1985	
Peak	220 000	28 Dec	309.900	3 Nov 1984	
10% exceedance	29 670		24.880		119
50% exceedance	5.318		5.418		98
95% exceedance	1.312		1.368		96
Annual total (million cu m)	368.30		332 30		111
Annual runoff (mm)	1144		1032		111
Annual rainfall (mm)	1628		1349		121
(1941-70 rainfall average (mm)			1464)		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow

Station and catchment description
Compound Crump profile weir. Lower crest 15.2m, upper crest 29.5m. Theoretical rating. Natural flow regime.

025006 Greta at Rutherford Bridge 1990

Measuring authority: NRA-N
First year: 1960
Grid reference 45 (NZ) 034 122
Level stn. (m OD): 223.00
Catchment area (sq km): 86.1
Max alt (m OD): 596

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.062	11 740	2 409	0 294	0 216	0 101	0 690	0 071	0 089	0 449	1.916	0 742
2	3 486	6 265	2 445	0 309	0.191	0.104	0 479	0 064	0 079	0 678	1 398	0 659
3	2.633	3 958	7 843	0 358	0 172	0 111	0 264	0 058	0 075	1 490	1 032	0 598
4	1 507	16.260	5.200	0 329	0.163	0.142	2 983	0 053	0 077	0 626	0 859	0.539
5	1.191	4 268	2.526	0 322	0 154	0 147	2 761	0 054	0 099	1.658	0.715	0 492
6	3 325	3 823	1 632	0 468	0 145	0 182	0 972	0 060	0 126	7 248	0.580	0 561
7	3 000	17 800	1.314	0 354	0 144	0 273	0 907	0 067	0 211	1 873	0 521	9 021
8	2 473	7 099	1 273	0 289	0 198	0 231	0 911	0.068	0.140	0 715	0 488	6 143
9	1.639	2 882	1 488	0 264	0 234	0 240	1 197	0 066	0 101	0 510	0 511	2 970
10	4 449	2 206	1 375	0 255	0.291	0 197	0 541	0 067	0 089	1.954	0 781	2.883
11	5 834	3 724	1 180	0 239	0 431	0 171	0 333	0 066	0 084	7 269	0 951	17.190
12	3.022	2 899	0.846	0 243	0 329	0 153	0 263	0 065	0 080	2 193	0.721	11 490
13	1 753	6 789	1.524	0 242	0.268	0 140	0 201	0 063	0 077	0 711	0 991	3 335
14	1 429	6 076	1 160	0 242	0 236	0.131	0 160	0.063	0 074	0.487	3.499	2 160
15	1 742	3 011	1.184	0 332	0.726	0 123	0.153	0 079	0 070	0 657	2 587	1 849
16	6 921	2 093	1 546	0 415	1 144	0 116	0 195	0.148	0 068	1 128	12.050	3 874
17	2 918	13 410	0 819	0 505	0 663	0.108	0 150	0.219	0 074	0.703	6.864	3 033
18	1 929	5 047	0.620	0 647	0 478	0.104	0 117	0 208	0 109	1 169	4 038	1 823
19	10 920	41 940	0 583	0 760	0 346	0 099	0.100	0 322	0 398	7.812	9.656	1 871
20	2 875	14 610	0 499	0 566	0 280	0 092	0 091	0.278	0 259	6 103	8 290	14 030
21	3 092	5.173	0.471	0 675	0 248	0 094	0 090	0 163	0 323	2.675	4 917	10 670
22	4 481	2 477	0 414	0 554	0 213	0.232	0 091	0 130	0 176	1 165	2.343	11.680
23	12.780	1.852	0 405	0 394	0 177	0 336	0 086	0.113	0.170	0.775	1.027	4 443
24	3.569	7.299	0.620	0 297	0.152	0.171	0 081	0 120	0 217	0 691	2 032	3 048
25	23.290	15 680	0 695	0 245	0 142	0 159	0 074	0 104	0.360	1 052	7.518	19 700
26	4 500	11 130	0 515	0 524	0 134	0 138	0 071	0 086	0 222	4 435	6.273	23 170
27	3 833	5 490	0 427	0 551	0 127	0 142	0 080	0 081	0 153	1 910	4 440	5 180
28	2.875	4 185	0 378	0 358	0 127	0 129	0 085	0 086	0 129	12 260	2 881	22 140
29	29 550		0.344	0 290	0 124	0.115	0 076	0 093	0 144	4 287	1 681	6 186
30	15 870		0 330	0.247	0.128	0 335	0.075	0.091	0 869	9.580	0.969	3.538
31	9.144		0.308		0 110		0 080	0.101		4 565		9 793
Average	5 713	8.185	1 367	0 386	0 274	0 160	0 463	0.107	0 171	2.865	3.084	6.607
Lowest	1 062	1 852	0.308	0 239	0 110	0.092	0 071	0 053	0 068	0 449	0 488	0 492
Highest	29 550	41 940	7 843	0 760	1 144	0 336	2 983	0 322	0 869	12.260	12.050	23 170
Peak flow	60.58	83 55	11 57	1 09	1 66	0 81	10 03	0.54	1.47	30 40	25.10	65 82
Day of peak	25	19	3	18	16	30	4	19	30	28	16	28
Monthly total (million cu m)	15 30	19 80	3.66	1.00	0.73	0 42	1.24	0 29	0 44	7 67	7.99	17.70
Runoff (mm)	178	230	43	12	9	5	14	3	5	89	93	206
Rainfall (mm)	206	248	45	36	39	60	45	50	56	143	74	177

Statistics of monthly data for previous record (Oct 1960 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	3.713	2 697	3.286	2 199	1.300	0 851	0 711	1.329	1.474	2 533	3 311	3 611
	Low	0 290	0 280	0 842	0 375	0 148	0 130	0 092	0.098	0 110	0 195	0 951	0.944
	(year)	1963	1963	1973	1982	1980	1970	1984	1976	1989	1972	1973	1971
	High	7 155	6.881	8.926	4 682	3.951	2 502	2 783	4 107	4 067	6 665	6 878	6 406
	(year)	1975	1966	1979	1969	1967	1980	1988	1971	1965	1967	1963	1979
Runoff:	Avg	115	77	102	66	40	26	22	41	44	79	100	112
	Low	9	8	26	11	5	4	3	3	3	6	29	29
	High	223	193	278	141	123	75	87	128	122	207	207	199
Rainfall:	Avg	118	83	101	76	76	71	72	98	92	105	113	120
	Low	38	13	31	10	16	18	20	35	18	21	43	43
	High	194	167	220	136	164	188	194	200	206	269	219	296

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	2 418		2.251		107
Lowest yearly mean			1 447	1973	
Highest yearly mean			2 926	1979	
Lowest monthly mean	0 107	Aug	0 092	Jul 1984	
Highest monthly mean	8 185	Feb	8 926	Mar 1979	
Lowest daily mean	0 053	4 Aug	0 040	25 Aug 1976	
Highest daily mean	41 940	19 Feb	54 090	6 Mar 1963	
Peak	83 550	19 Feb	210.400	25 Aug 1986	
10% exceedance	6 932		5 731		121
50% exceedance	0 532		0 821		65
95% exceedance	0 074		0 127		58
Annual total (million cu m)	76 25		71 04		107
Annual runoff (mm)	886		825		107
Annual rainfall (mm)	1179		1125		105
[1941-70 rainfall average (mm)			1259]		

Factors affecting flow regime

Station and catchment description
Compound Crump profile weir total width 19.2m, low flow crest 3m broad. Theoretical rating with check gaugings. Natural eastward-draining Pennine catchment.

027002 Wharfe at Flint Mill Weir 1990

Measuring authority: NRA-Y
First year: 1936
Grid reference: 44 (SE) 422 473
Level stn. (m OD): 13.70
Catchment area (sq km): 758.9
Max alt. (m OD): 704

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7.431	38.060	37.980	4.993	4.347	2.874	6.881	2.386	4.656	7.693	17.820	5.796
2	12.180	32.490	26.930	5.379	4.024	2.848	6.841	2.322	5.013	4.158	12.090	5.090
3	26.750	27.590	29.460	6.083	3.768	2.904	6.431	2.239	3.632	10.890	8.684	4.894
4	14.400	40.330	53.520	5.429	3.778	2.807	9.149	2.165	3.345	11.610	7.025	4.444
5	10.760	37.570	46.460	5.164	3.709	2.912	50.470	2.119	3.258	57.410	5.966	4.196
6	13.280	20.300	25.770	4.886	3.595	3.036	14.070	2.119	3.055	46.360	5.226	4.001
7	17.200	67.150	20.720	5.101	3.523	3.160	9.771	2.398	5.264	24.930	4.858	10.520
8	28.180	73.180	16.440	4.781	3.783	3.642	26.620	2.279	4.795	10.980	4.498	24.650
9	18.280	43.370	16.210	4.565	5.463	5.726	11.660	2.231	2.946	11.510	3.781	25.640
10	20.670	39.930	30.180	4.414	20.060	3.898	7.296	2.160	2.435	17.620	3.465	37.010
11	105.000	37.510	19.600	4.570	9.418	3.377	5.507	2.203	2.161	48.730	3.497	56.000
12	36.200	37.540	13.340	4.539	6.027	3.251	5.396	2.255	2.085	25.970	6.635	53.030
13	22.480	44.470	18.250	4.514	5.317	3.072	4.727	2.260	2.044	12.400	8.767	22.310
14	17.020	61.370	21.150	4.533	4.695	2.989	4.043	2.167	2.033	8.432	10.820	15.430
15	39.620	35.020	13.450	4.877	5.295	2.957	4.073	2.325	2.044	6.501	12.030	11.680
16	41.880	23.340	11.200	7.210	8.858	2.793	3.965	2.818	2.034	6.598	73.990	16.120
17	52.620	42.390	9.119	6.898	8.259	2.701	3.684	5.214	2.151	9.054	58.890	15.650
18	22.280	34.220	7.797	7.962	5.570	2.756	3.539	6.963	2.039	9.922	40.360	11.320
19	32.290	79.130	7.287	9.155	4.941	2.801	3.412	7.925	13.180	11.950	39.510	9.212
20	25.310	96.800	6.873	8.492	4.303	2.731	3.268	10.420	7.233	14.340	21.490	46.300
21	19.120	39.810	6.699	6.620	4.007	3.250	3.157	4.678	17.190	9.821	13.570	33.800
22	27.910	24.450	6.738	5.567	3.619	5.549	3.011	3.845	6.492	7.278	10.430	56.970
23	61.900	18.030	6.130	4.720	3.579	4.156	2.816	3.626	4.030	5.620	8.713	32.470
24	41.070	17.650	7.538	4.699	3.403	3.562	2.665	3.618	3.333	4.692	10.990	21.750
25	115.200	33.670	10.870	4.272	3.261	4.345	2.510	4.056	2.740	4.656	17.520	49.840
26	62.270	104.400	11.150	6.237	3.187	4.360	2.462	3.974	2.383	15.090	17.490	95.930
27	39.300	58.370	8.124	11.560	3.105	4.078	2.502	3.238	2.217	12.200	15.680	51.730
28	43.180	54.240	7.097	5.999	3.106	5.031	2.561	2.996	1.988	27.060	10.420	56.430
29	78.900		6.446	5.347	3.054	4.421	2.494	2.887	2.038	45.000	8.069	49.220
30	79.530		5.897	4.765	3.014	4.074	2.474	3.431	3.959	53.560	7.031	25.620
31	71.060		4.982		2.933		2.391	2.672		27.350		27.810
Average	38.820	45.080	16.500	5.778	5.000	3.535	7.092	3.419	4.059	18.370	15.640	28.540
Lowest	7.431	17.650	4.982	4.272	2.933	2.701	2.391	2.119	1.988	4.158	3.465	4.001
Highest	115.200	104.400	53.520	11.560	20.060	5.726	50.470	10.420	17.190	57.410	73.990	95.930
Peak flow	198.70	192.00	71.33	19.18	26.55	7.18	98.81	22.29	34.38	97.17	184.80	156.00
Day of peak	25	19	4	26	10	9	5	19	21	5	16	26
Monthly total (million cu m)	104.00	109.10	44.19	14.98	13.39	9.16	18.99	9.16	10.52	49.19	40.55	76.45
Runoff (mm)	137	144	58	20	18	12	25	12	14	65	53	101
Rainfall (mm)	208	201	54	45	39	84	52	72	61	146	83	152

Statistics of monthly data for previous record (Oct 1955 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	27.600	23.010	21.640	16.140	10.960	7.384	7.649	11.720	13.410	18.230	23.210	27.460
	Low	4.472	2.974	6.741	4.496	2.312	1.545	1.674	0.991	1.419	3.026	6.876	10.230
	(year)	1963	1963	1961	1974	1980	1957	1976	1976	1959	1972	1958	1963
	High	44.000	54.590	53.940	35.240	26.750	18.520	16.440	41.340	33.520	54.000	51.090	62.090
	(year)	1984	1966	1981	1970	1967	1972	1963	1956	1968	1967	1963	1965
Runoff:	Avg	97	74	78	55	39	25	27	41	46	64	79	97
	Low	16	9	24	15	8	5	6	4	5	11	23	36
	High	155	174	190	120	94	63	58	146	115	191	174	219
Rainfall:	Avg	113	82	93	75	76	76	85	101	102	110	110	124
	Low	41	14	28	8	13	18	20	18	8	32	33	41
	High	217	194	222	147	181	183	185	226	241	225	211	233

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	15.840		17.350		91
Lowest yearly mean			11.420	1975	
Highest yearly mean			23.300	1966	
Lowest monthly mean	3.419	Aug	0.991	Aug 1976	
Highest monthly mean	45.080	Feb	62.090	Dec 1965	
Lowest daily mean	1.988	28 Sep	0.425*	23 Jun 1957	
Highest daily mean	115.200	25 Jan	288.400	3 Jan 1982	
Peak	198.700	25 Jan	362.800	3 Jan 1982	
10% exceedance	43.380		41.050		106
50% exceedance	6.700		9.674		69
95% exceedance	2.241		2.349		95
Annual total (million cu m)	499.50		547.50		91
Annual runoff (mm)	658		721		91
Annual rainfall (mm)	1197		1147		104
[1941-70 rainfall average (mm)			1168]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from surface water and/or groundwater.

Station and catchment description

Broad-crested masonry weir 47m wide with a current meter cableway 1.5km upstream. Insensitive at low flows. Level data only from 1936 to 1955. Pre-1965 data less reliable. Recalibration underway - expected to increase flows. Headwater reservoirs exert a substantial influence on flows. Mixed geology - mainly Carboniferous Limestone, grits and Coal Measures, some Permian sand and Magnesian Limestone and marls in the lower catchment. Predominantly rural catchment with moorland headwaters.

*Under review.

027035 Aire at Kildwick Bridge 1990

Measuring authority: NRA-Y.
First year: 1968
Grid reference: 44 (SE) 013 457
Level stn. (m OD): 87 30
Catchment area (sq km): 282.3
Max alt. (m OD): 593

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	5.402	17.630	19.600	1.681	1.097	0.530	2.850	0.448	0.819	1.696	8.609	3.124
2	13.110	14.520	14.940	1.754	1.001	0.572	1.980	0.419	0.733	1.170	6.145	2.873
3	11.720	11.380	13.460	1.762	0.922	0.566	1.405	0.432	0.674	3.062	4.641	2.653
4	6.979	16.880	12.220	1.531	0.861	0.537	5.465	0.394	0.611	2.632	3.765	2.409
5	5.564	12.450	10.570	1.485	0.841	0.594	8.919	0.405	0.602	9.468	3.166	2.219
6	9.497	9.212	8.144	1.454	0.824	0.677	3.683	0.592	0.787	14.390	2.858	2.233
7	10.580	33.280	6.967	1.331	0.983	0.780	4.658	0.572	1.195	7.643	2.613	9.885
8	11.130	31.250	5.934	1.228	1.474	1.188	4.390	0.461	0.871	3.854	2.326	16.610
9	9.283	22.390	5.682	1.213	2.584	1.095	2.821	0.465	0.721	3.491	2.232	23.270
10	20.890	19.070	9.276	1.250	2.269	0.889	2.299	0.442	0.642	6.578	2.121	25.670
11	38.370	17.530	6.200	1.214	1.719	0.795	1.799	0.436	0.610	23.010	3.509	24.600
12	20.300	20.510	4.935	1.197	1.357	0.693	1.482	0.417	0.585	9.041	5.381	16.710
13	12.160	27.230	10.280	1.134	1.129	0.622	1.193	0.390	0.551	5.600	5.007	9.190
14	10.340	22.670	6.748	1.227	1.059	0.591	1.045	0.380	0.522	3.951	5.673	6.930
15	16.730	15.170	4.921	1.448	1.617	0.562	1.056	0.713	0.490	3.914	6.211	5.703
16	19.080	11.160	4.085	1.724	1.560	0.546	1.007	2.543	0.483	3.854	31.470	6.306
17	15.740	15.660	3.542	1.899	1.232	0.520	0.893	1.346	0.521	3.257	26.920	5.284
18	9.681	12.190	3.177	1.929	1.075	0.594	0.817	1.009	0.634	4.003	20.280	4.516
19	17.450	35.300	3.170	3.105	0.953	0.649	0.783	3.034	1.646	2.964	17.790	4.064
20	12.620	36.020	2.837	2.528	0.897	0.571	0.761	1.843	1.333	2.503	10.610	13.370
21	11.450	20.700	3.097	2.076	0.834	1.183	0.743	1.088	2.130	2.208	7.626	9.760
22	12.730	14.330	2.674	1.675	0.756	2.384	0.684	0.887	1.257	1.878	6.056	10.110
23	31.290	9.812	2.494	1.438	0.698	1.452	0.589	0.790	1.022	1.683	5.109	7.722
24	25.140	10.010	3.657	1.300	0.655	1.027	0.544	1.504	0.889	1.696	8.649	6.634
25	48.900	17.560	3.795	1.198	0.641	1.018	0.513	2.190	0.782	2.057	8.019	22.130
26	33.460	36.400	2.879	1.631	0.652	0.970	0.512	0.934	0.695	4.832	6.410	41.680
27	24.140	24.060	2.393	1.530	0.746	2.305	0.562	0.728	0.623	3.670	5.360	26.370
28	28.130	20.420	2.202	1.345	0.638	2.211	0.518	0.703	0.590	21.420	4.484	32.970
29	43.440		1.963	1.249	0.623	1.240	0.490	0.706	0.747	29.080	3.909	23.340
30	28.680		1.873	1.173	0.600	1.807	0.488	0.704	3.440	24.460	3.489	12.720
31	29.020		1.746		0.538		0.453	0.690		14.020		12.030
Average	19.130	19.810	5.983	1.557	1.059	0.972	1.787	0.892	0.907	7.196	7.681	12.680
Lowest	5.402	9.212	1.746	1.134	0.538	0.520	0.453	0.380	0.483	1.170	2.121	2.219
Highest	48.900	36.400	19.600	3.105	2.584	2.384	8.919	3.034	3.440	29.080	31.470	41.680
Peak flow	55.46	53.62	23.29	3.93	3.76	4.60	13.27	4.60	4.98	38.91	49.00	50.80
Day of peak	29	7	1	19	9	27	5	24	30	29	16	26
Monthly total (million cu m)	51.24	47.93	16.02	4.04	2.84	2.52	4.79	2.39	2.35	19.27	19.91	33.96
Runoff (mm)	181	170	57	14	10	9	17	8	8	68	71	120
Rainfall (mm)	221	191	53	44	41	86	48	84	62	145	76	139

Statistics of monthly data for previous record (Dec 1988 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	10.850	8.146	7.799	5.045	2.863	2.290	1.862	3.305	3.820	7.177	10.040	10.750
	Low	4.463	3.529	2.391	0.923	0.611	0.604	0.298	0.289	0.497	0.789	3.583	3.175
	(year)	1973	1986	1985	1974	1974	1970	1984	1976	1989	1972	1975	1971
	High	18.800	14.990	22.520	11.400	8.174	6.418	5.927	11.410	10.380	17.570	16.540	20.820
	(year)	1988	1988	1981	1986	1983	1982	1973	1985	1974	1981	1984	1979
Runoff	Avg.	103	71	74	46	27	21	18	31	35	68	92	102
	Low	42	30	23	8	6	6	3	3	5	7	33	30
	High	178	133	214	105	78	59	56	108	95	167	152	198
Rainfall	Avg	120	75	105	69	72	77	77	95	106	116	125	123
	Low	45	13	44	3	10	23	17	17	22	37	55	42
	High	222	139	233	135	142	155	179	171	250	213	187	238

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	6.572		6.157		107
Lowest yearly mean			3.655	1971	
Highest yearly mean			8.161	1988	
Lowest monthly mean	0.892	Aug	0.289	Aug 1976	
Highest monthly mean	19.810	Feb	22.520	Mar 1981	
Lowest daily mean	0.380	14 Aug	0.180	23 Aug 1976	
Highest daily mean	48.900	25 Jan	79.900	27 Oct 1980	
Peak	55.460	29 Jan	98.130	5 Dec 1972	
10% exceedance	20.390		15.470		132
50% exceedance	2.288		3.146		73
95% exceedance	0.513		0.495		104
Annual total (million cu m)	207.30		194.30		107
Annual runoff (mm)	734		688		107
Annual rainfall (mm)	1190		1160		103
(1941-70 rainfall average (mm))			1134)		

Factors affecting flow regime

- Reservoir(s) in catchment.

Station and catchment description

Velocity-area station rated by current meter cableway 150m downstream. Low flow control is the sills of the bridge. Washland storage and headwater reservoirs influence the flow pattern. Geology is mainly Carboniferous Limestone with some Millstone Grit series. Rural catchment draining part of the eastern Pennines.

027041 Derwent at Buttercrambe 1990

Measuring authority: NRA-Y
First year: 1973

Grid reference: 44 (SE) 731 587
Level stn (m OD): 9.50

Catchment area (sq km): 1586.0
Max alt. (m OD): 454

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7.273	30.320	21.800	7.822	5.200	4.300	6.333	3.201	3.024	4.130	6.617	8.459
2	7.460	25.900	22.380	7.990	5.128	4.508	6.276	3.131	2.956	3.805	6.125	7.729
3	9.361	23.920	22.120	8.009	5.056	4.508	5.766	3.058	2.929	3.605	10.650	7.316
4	9.145	19.970	21.380	7.957	4.957	4.321	5.853	2.961	2.884	3.911	19.480	6.963
5	8.180	17.770	18.150	7.639	4.774	4.366	8.823	2.917	2.852	3.758	27.230	6.718
6	8.620	16.510	16.510	7.566	4.815	4.605	8.426	2.951	2.872	3.700	17.280	6.530
7	12.440	36.220	15.200	7.418	4.984	4.722	6.894	3.011	2.980	3.825	12.340	8.062
8	11.380	57.560	14.200	7.237	5.194	4.892	6.595	3.062	3.200	3.627	10.630	44.170
9	10.600	44.470	13.580	7.197	5.347	5.404	6.073	3.017	3.079	3.449	9.213	68.550
10	9.579	35.300	12.840	7.165	6.072	5.576	5.400	3.018	2.947	3.439	8.438	82.580
11	9.358	31.150	12.340	6.990	5.956	5.025	5.051	3.017	2.890	3.879	8.252	83.210
12	9.090	27.670	11.700	6.810	7.680	4.596	4.808	3.022	2.891	5.587	7.885	80.420
13	8.414	23.860	12.020	6.629	8.381	4.396	4.579	3.024	2.890	4.538	7.475	61.460
14	8.053	25.590	12.890	6.615	6.637	4.228	4.401	3.036	2.856	3.917	7.299	45.690
15	7.966	23.520	11.770	6.647	6.260	4.104	4.328	3.117	2.788	3.701	6.862	35.510
16	7.667	21.620	11.070	6.466	6.322	4.024	4.231	3.267	2.772	3.585	6.562	30.060
17	7.684	19.800	10.550	6.467	5.815	3.904	4.216	3.145	2.892	3.446	6.634	25.020
18	7.219	18.550	10.210	6.523	5.419	3.996	4.065	3.023	2.929	3.585	6.916	21.550
19	7.187	17.360	9.953	6.446	5.204	4.125	3.892	3.402	3.081	6.975	6.581	19.380
20	7.023	17.130	9.638	6.359	5.077	4.211	3.765	3.929	3.033	9.889	6.251	18.220
21	6.828	15.950	9.602	6.264	5.002	4.453	3.630	3.569	2.991	6.743	5.902	20.720
22	6.845	14.760	9.248	6.194	4.871	12.840	3.504	3.197	2.993	5.210	5.739	20.180
23	8.761	14.010	9.038	6.070	4.735	19.810	3.508	3.066	2.953	4.480	5.724	20.950
24	11.200	13.880	9.034	5.829	4.550	10.170	3.428	3.018	3.054	4.084	5.911	16.890
25	19.680	14.280	8.725	5.551	4.446	7.418	3.306	3.167	3.549	3.888	8.990	20.190
26	25.910	28.120	8.449	5.575	4.385	6.399	3.247	3.232	4.318	3.997	11.800	31.020
27	18.710	26.450	8.287	5.606	4.334	5.959	3.274	3.077	3.587	5.475	13.010	28.610
28	49.720	20.500	8.246	5.460	4.294	6.632	3.325	2.988	3.374	8.023	12.600	26.380
29	52.090		8.125	5.389	4.258	6.411	3.306	3.038	3.293	15.510	10.070	42.330
30	52.470		7.997	5.317	4.289	5.812	3.305	3.091	3.450	10.130	9.202	32.480
31	41.690		7.841		4.296		3.269	3.166		8.476		24.470
Average	15.090	24.360	12.420	6.640	5.282	5.857	4.738	3.126	3.077	5.238	9.589	30.700
Lowest	6.828	13.880	7.841	5.317	4.258	3.904	3.247	2.917	2.772	3.439	5.724	6.530
Highest	52.470	57.560	22.380	8.009	8.381	19.810	8.823	3.929	4.318	15.510	27.230	83.210
Peak flow	57.13	59.16	23.53	8.18	9.15	24.39	9.63	4.17	4.75	17.82	28.24	84.53
Day of peak	28	8	1	2	13	22	5	20	26	29	5	11
Monthly total (million cu m)	40.42	58.94	33.25	17.21	14.15	15.18	12.69	8.37	7.97	14.03	24.85	82.24
Runoff (mm)	25	37	21	11	9	10	8	5	5	9	16	52
Rainfall (mm)	84	75	17	18	34	103	27	40	44	82	63	115

Statistics of monthly data for previous record (Jan 1973 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	27.710	25.670	25.590	20.080	14.730	10.350	8.463	8.361	8.238	13.580	15.240	24.130
	Low	9.640	8.606	8.254	6.928	7.849	5.342	3.882	3.214	3.469	4.172	5.472	10.390
	(year)	1989	1973	1973	1978	1982	1974	1976	1976	1989	1989	1989	1989
	High	48.190	49.280	56.110	37.540	29.840	21.260	17.120	15.430	14.710	36.820	25.220	42.740
	(year)	1977	1978	1979	1986	1979	1979	1973	1980	1976	1976	1980	1978
Runoff:	Avg	47	40	43	33	25	17	14	14	13	23	25	41
	Low	16	13	11	11	13	9	7	5	6	7	9	18
	High	81	75	95	61	50	35	29	26	24	62	41	72
Rainfall:	Avg	74	49	73	52	59	55	62	68	68	78	66	80
	Low	20	5	7	11	17	11	18	10	18	21	28	24
	High	132	101	143	113	142	149	138	126	192	158	111	180

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	10.440		16.820		62
Lowest yearly mean			7.900	1989	
Highest yearly mean			25.320	1979	
Lowest monthly mean	3.077	Sep	3.214	Aug 1976	
Highest monthly mean	30.700	Dec	56.110	Mar 1979	
Lowest daily mean	2.772	16 Sep	2.697	23 Aug 1976	
Highest daily mean	83.210	11 Dec	121.400	29 Dec 1978	
Peak	84.530	11 Dec	124.800	5 Jan 1982	
10% exceedance	22.840		34.150		67
50% exceedance	6.449		12.730		51
95% exceedance	2.983		4.627		64
Annual total (million cu m)	329.20		530.80		62
Annual runoff (mm)	208		335		62
Annual rainfall (mm)	702		784		90
(1941-70 rainfall average (mm)			784)		

Factors affecting flow regime

- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Compound Crump weir, 20m wide; current meter rating for high flows. Pre-October 1973 data (monthly only) of poorer quality; derives from Stamford Br. adjustment factor of 0.98 used to allow for C.A. difference). Peak flows from the headwaters upstream of Forge Valley (8% catchment) are diverted down the Sea Cut (27033). Very minor net impact of artificial influences. Mixed geology of clays, shales and limestone. Rural catchment draining the North York Moors.

027053 Nidd at Birstwith 1990

Measuring authority: NRA-Y
First year: 1975
Grid reference: 44 (SE) 230 603
Level stn. (m OD): 67 40
Catchment area (sq km): 217.6
Max alt. (m OD): 705

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	3 198	17 100	15 890	1 630	0 915	0 702	0.913	0 631	0 496	0 667	2 711	2 158
2	3 967	14 530	13 850	1 569	0 911	0.700	0 786	0 618	0 494	0 560	2 527	2 107
3	3.832	12 480	14 030	1.590	0 898	0 699	0.720	0 608	0 475	0 782	2.348	2 061
4	3 052	12 510	14 520	1 504	0 897	0.688	2 101	0 594	0 458	0 702	2.222	2.014
5	2 807	11 470	15 760	1 474	0 869	0.721	1.419	0 589	0 462	1 692	2 155	1.959
6	3 438	11 060	11 860	1 436	0 866	0.812	0 928	0 496	0 476	1 410	2 091	1.958
7	3 597	28 440	11 170	1 416	0.872	0 740	1.151	0 513	0 490	0 873	2 055	3.947
8	3 438	25 290	6.621	1 406	0.920	0 858	1 230	0 515	0 509	0 651	2 033	5.233
9	3 227	19 380	6 344	1 393	0 911	0.877	0 867	0 554	0.506	0 926	2 025	7.276
10	8 115	15 880	6 557	1 403	0 905	0 783	0.787	0 495	0 502	1 148	2.045	13 770
11	15 700	14 610	5 841	1.378	0.890	0.725	0 789	0 480	0 524	2.934	2 144	20 370
12	11.740	13 530	5 575	1 341	0 859	0 718	0 740	0.478	0 539	1 281	2 295	15 080
13	10 650	20 980	4 488	1 322	0.858	0 723	0.728	0 476	0 528	0.947	2 253	11 970
14	7.181	15.930	3 394	1 336	0 909	0 712	0 711	0 476	0 504	1 016	2.287	10 850
15	8 132	13 210	3 048	1 325	1 058	0 695	0.717	0 566	0 500	1 102	2.520	7 859
16	13 920	11 870	2 280	1 311	0 933	0.687	0 711	0.640	0 499	1 229	11 350	5.492
17	12 400	9 156	2 035	1 389	0.908	0 671	0.677	0 515	0 503	1 253	11 450	3.726
18	11 000	7 077	1.972	1 362	0 862	0 712	0 655	0.498	0.535	1 863	12 930	3 324
19	10 720	25 680	1 918	1 490	0.813	0 747	0.643	0.716	0 653	3 168	8 564	4.199
20	9 603	30 750	8 456	1 460	0 798	0.718	0 639	0 555	0 621	2 157	5 708	11 630
21	7 723	13 910	6 002	1 407	0 787	0.892	0 651	0 495	0 627	1 603	3 039	12 810
22	6 688	11 080	3 023	1 369	0 755	1 224	0 651	0 482	0.525	1 351	2 549	13 310
23	15 420	10 600	2 038	1.319	0 726	0 790	0.651	0 481	0 458	1 255	2 425	11.120
24	16 780	7 457	2.185	1 291	0.738	0.779	0 651	0 539	0 478	1 321	3 325	6 588
25	73 480	15 310	2 066	1.278	0 737	0 774	0 646	0 534	0 534	1 460	3 229	12 830
26	22.710	61 540	1 849	1 557	0 731	0.753	0 649	0 485	0 527	3.521	2 985	39 960
27	14 720	36.900	1 799	1 203	0 730	0 817	0 663	0 473	0 512	1 759	2 692	20.320
28	14.750	22 370	1 725	1.017	0 723	0.766	0 648	0 483	0 511	3.711	2 452	23 700
29	41 580		1 716	0 978	0 723	0 728	0 643	0 499	0.588	5.894	2 327	18.880
30	45 000		1 659	0 950	0 723	0 919	0 638	0.490	1 339	4 876	2 236	12 570
31	29 870		1 629		0 722		0 636	0 496		2.675		12 020
Average	14 140	18.220	5 848	1.363	0 837	0 771	0 808	0.531	0 546	1 800	3.699	10.360
Lowest	2 807	7 077	1 629	0 950	0.722	0 671	0 636	0 473	0 458	0 560	2 025	1 958
Highest	73 480	61 540	15 890	1 630	1 058	1.224	2 101	0 716	1 339	5 894	12 930	39 960
Peak flow	147 50	122 00	20 30	1 79	1.13	1.77	3.19	0 80	2 02	9.96	21 15	68 38
Day of peak	25	26	4	26	15	22	4	19	30	29	16	26
Monthly total (million cu m)	37.88	44 07	15 66	3 53	2 24	2 00	2.16	1.42	1 41	4 82	9 59	27 74
Runoff (mm)	174	203	72	16	10	9	10	7	7	22	44	127
Rainfall (mm)	221	213	53	38	33	79	48	55	61	155	79	158

Statistics of monthly data for previous record (Apr 1975 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	9 603	7 738	8 128	4 555	2.837	1 804	1 275	1 967	2 211	4 977	6 762	9 589
	Low	3 072	3 068	1 915	1 681	1 064	1 015	0 814	0 655	0 791	1 311	1 893	3 612
	(year)	1989	1986	1985	1984	1984	1975	1984	1984	1989	1989	1975	1975
	High	16.110	16 010	21 140	12 770	7.061	3.131	2.164	5.690	3 955	15.120	12 830	20.280
	(year)	1988	1984	1979	1986	1983	1982	1988	1985	1985	1976	1984	1979
Runoff	Avg	118	87	100	54	35	21	16	24	26	61	81	118
	Low	38	34	24	20	13	12	10	8	9	16	23	44
	High	198	184	260	152	87	37	27	70	47	186	153	250
Rainfall (1976-1989)	Avg	140	92	133	77	80	80	64	106	110	136	128	157
	Low	52	16	75	11	16	16	18	22	22	36	62	80
	High	250	182	243	165	149	185	191	192	253	223	208	258

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	4.837		5 115		95
Lowest yearly mean			3 642	1989	
Highest yearly mean			7 148	1979	
Lowest monthly mean	0.531	Aug	0 655	Aug 1984	
Highest monthly mean	18 220	Feb	21 140	Mar 1979	
Lowest daily mean	0 458	4 Sep	0 392	21 Aug 1984	
Highest daily mean	73 480	25 Jan	109 400	28 Dec 1978	
Peak	147.500	25 Jan	204 400	13 Jan 1984	
10% exceedance	13 830		12.340		112
50% exceedance	1 375		2.577		53
95% exceedance	0 495		0 960		52
Annual total (million cu m)	152.50		161.40		94
Annual runoff (mm)	701		742		94
Annual rainfall (mm)	1193		1303		92
[1941-70 rainfall average (mm)			1209]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Velocity-area station approximately 17m wide, rated by current metering from bridge at the section. Heavily reservoired catchment with substantial effect on flows. Geology is mostly Millstone Grit. Rural catchment.

028009 Trent at Colwick 1990

Measuring authority: NRA-ST
First year: 1958
Grid reference 43 (SK) 620 399
Level stn. (m OD): 16.00
Catchment area (sq km): 7486.0
Max alt. (m OD): 636

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	77.730	304.300	287.400	44.060	36.280	26.880	33.520	23.810	22.490	42.390	116.800	37.260
2	100.200	320.300	207.900	44.810	33.880	29.940	32.100	22.580	22.000	31.010	97.760	34.620
3	108.300	289.100	149.100	47.550	34.860	28.140	28.770	22.020	22.120	31.520	64.180	35.330
4	93.800	237.100	128.500	47.790	33.430	30.990	36.050	21.490	22.850	37.850	47.190	36.330
5	81.570	171.100	121.400	44.430	32.090	27.840	42.520	21.110	22.730	30.520	40.280	35.350
6	80.770	141.900	106.400	43.600	29.980	30.540	36.340	21.260	22.400	30.300	36.760	33.410
7	111.900	263.900	95.020	42.550	30.030	30.350	35.040	21.600	22.560	29.530	35.160	35.640
8	105.900	434.400	87.020	41.060	31.340	33.240	38.970	21.610	23.630	28.190	33.450	60.240
9	96.460	434.400	78.840	41.930	32.880	38.510	31.770	22.300	22.570	25.400	33.380	83.760
10	86.290	343.100	74.160	41.340	33.750	38.080	30.160	22.050	22.180	24.460	32.730	181.800
11	81.000	223.900	68.850	41.780	33.880	30.970	28.560	21.770	22.460	24.140	33.270	232.300
12	78.040	219.800	65.990	41.160	32.370	28.400	26.930	21.510	22.920	23.900	38.240	228.100
13	80.970	193.200	70.140	42.340	31.380	28.040	26.990	21.090	22.670	24.390	42.160	170.500
14	74.430	198.200	74.430	42.420	31.610	27.580	24.460	21.260	22.480	24.730	46.240	110.400
15	76.560	212.500	64.560	46.080	37.350	27.690	26.340	22.620	22.310	23.890	51.870	82.290
16	80.680	192.000	60.880	43.680	50.540	28.800	27.730	23.210	21.830	25.400	53.140	70.270
17	76.270	154.800	56.300	41.830	38.560	27.630	26.850	22.880	22.980	32.800	86.610	68.060
18	70.660	151.700	54.230	43.330	34.190	26.580	24.350	27.660	23.200	62.730	99.040	61.460
19	66.400	128.900	58.590	48.230	31.650	31.220	24.510	52.910	25.030	65.830	81.610	56.590
20	65.480	122.200	67.130	64.110	30.870	32.960	23.560	60.450	28.710	67.250	122.900	59.220
21	60.060	119.500	57.820	61.940	30.600	43.130	23.740	39.000	24.170	41.000	107.200	94.830
22	64.590	108.500	54.790	50.310	30.210	61.000	23.510	29.700	24.630	31.870	73.440	79.440
23	101.200	97.630	50.330	44.540	29.760	51.000	23.400	26.280	24.890	29.040	57.670	70.620
24	151.200	89.710	51.880	41.830	28.730	40.700	23.220	24.560	30.550	26.710	54.470	67.520
25	181.400	91.020	55.600	40.720	28.740	33.910	23.320	24.230	49.090	32.340	65.280	113.800
26	245.700	113.800	52.460	39.330	28.140	32.310	23.290	23.960	38.950	61.300	55.440	239.700
27	181.600	181.600	48.730	40.700	26.930	31.190	23.420	22.770	28.740	71.740	49.190	248.800
28	313.800	221.100	47.480	37.880	26.420	30.250	23.970	22.320	25.390	74.350	45.650	172.500
29	329.400		46.020	39.120	26.310	29.210	24.030	22.060	25.600	81.890	42.080	189.500
30	295.600		44.920	36.220	27.710	29.200	25.000	22.740	34.640	53.320	40.900	166.800
31	306.100		44.440		30.180		25.480	24.040		58.470		166.300
Average	126.600	205.700	81.660	44.220	32.090	32.810	28.000	25.700	25.560	40.130	59.470	107.100
Lowest	60.060	89.710	44.440	36.220	26.310	26.580	23.220	21.090	21.830	23.890	32.730	33.410
Highest	329.400	434.400	287.400	64.110	50.540	61.000	42.520	60.450	49.090	81.890	122.900	248.800
Peak flow	340.00	448.30	301.40	71.24	58.58	69.33	66.50	76.74	58.35	103.00	145.60	282.50
Day of peak	28	9	1	20	16	22	5	19	25	29	20	27
Monthly total (million cu m)	339.00	497.60	218.70	114.60	85.94	85.04	74.99	68.85	66.25	107.50	154.10	288.90
Runoff (mm)	45	66	29	15	11	11	10	9	9	14	21	38
Rainfall (mm)	94	101	21	31	19	68	32	43	50	97	56	85

Statistics of monthly data for previous record (Oct 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	140.600	131.300	113.500	95.310	71.600	55.480	45.150	47.040	49.210	66.370	88.640	124.300
	Low	52.910	49.990	47.190	35.220	32.260	24.690	19.460	18.440	23.070	25.260	34.170	46.240
	(year)	1963	1976	1976	1976	1976	1976	1976	1976	1959	1959	1975	1975
	High	216.400	384.000	227.600	179.500	175.100	103.100	104.100	76.480	121.100	187.000	231.700	351.600
	(year)	1988	1977	1981	1966	1969	1987	1968	1966	1965	1960	1960	1965
Runoff:	Avg.	50	43	41	33	26	19	16	17	17	24	31	44
	Low	19	17	17	12	12	9	7	7	8	9	12	17
	High	77	124	81	62	63	36	37	27	42	67	80	126
Rainfall:	Avg.	72	53	62	58	60	61	57	71	64	66	72	78
	Low	23	8	13	9	18	14	18	21	3	12	38	15
	High	138	175	116	116	144	148	125	120	149	141	145	173

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	66.580		85.510		78
Lowest yearly mean			47.030	1976	
Highest yearly mean			124.000	1966	
Lowest monthly mean	25.560	Sep	18.440	Aug 1976	
Highest monthly mean	205.700	Feb	384.000	Feb 1977	
Lowest daily mean	21.090	13 Aug	14.700	23 Aug 1976	
Highest daily mean	434.400	8 Feb	854.900	26 Feb 1977	
Peak	448.300	9 Feb	956.700	25 Feb 1977	
10% exceedance	157.800		171.200		92
50% exceedance	40.190		60.600		66
95% exceedance	22.370		28.250		79
Annual total (million cu m)	2100.00		2698.00		78
Annual runoff (mm)	280		360		78
Annual rainfall (mm)	697		774		90
[1941-70 rainfall average (mm)			771]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater
- Augmentation from effluent returns

Station and catchment description

Velocity-area station in the navigable Trent. Main channel approx. 62m; cableway span 99m. Holme sluices 750m u/s affect water levels up to medium flows. Bypassed at high flows on rb when gravel workings inundated. Very substantial flow modifications owing to imports, WRW's, cooling water and industrial usage. Very large catchment with the gamut of land usage. Predominantly impervious - glacial clay and Triassic Marl, but some sandstone and limestone. Extensive terrace gravels and alluvium maintain baseflow.

028085 Derwent at St. Marys Bridge 1990

Measuring authority: NRA-ST
First year: 1936
Grid reference 43 (SK) 355 368
Level stn. (m OD): 44.00
Catchment area (sq km): 1054.0
Max alt. (m OD): 636

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15.620	53.350	45.360	8.271	4.894	4.172	5.243	3.962	3.870	4.919	17.610	6.885
2	17.030	47.860	36.000	9.026	4.915	4.475	4.577	3.799	3.955	4.626	14.310	6.564
3	15.910	36.200	32.280	8.665	4.792	4.411	4.286	3.932	3.966	5.069	11.050	8.098
4	14.180	30.260	36.980	8.209	4.688	4.576	7.078	3.883	3.759	4.792	9.158	8.032
5	13.530	27.650	33.900	8.133	4.811	4.611	5.674	4.043	4.197	4.952	8.286	7.131
6	15.240	27.240	29.210	7.827	4.681	4.457	4.964	4.133	4.008	4.849	7.825	6.885
7	15.770	89.870	26.630	6.863	4.378	4.305	5.198	4.215	3.976	4.511	7.757	7.719
8	16.160	81.560	22.870	6.985	5.354	4.297	5.130	4.071	3.857	4.324	7.166	14.170
9	15.480	51.290	20.850	7.614	5.528	5.365	5.128	4.390	3.639	4.219	7.287	18.590
10	14.840	43.150	18.560	7.007	5.988	4.206	4.543	3.741	3.797	4.166	6.493	36.680
11	15.290	37.640	16.980	7.404	5.383	3.908	4.765	3.714	3.637	3.680	6.255	33.650
12	14.270	42.290	16.510	7.339	4.708	4.125	4.529	3.690	3.806	3.914	8.471	37.950
13	13.490	44.420	18.000	7.256	4.680	4.235	4.100	3.865	3.791	4.082	7.130	20.710
14	13.530	51.930	16.370	7.572	5.361	4.382	3.939	3.937	3.757	4.004	7.970	18.070
15	17.300	48.430	15.000	7.779	6.553	3.867	4.036	4.627	3.716	4.476	8.182	14.940
16	17.050	37.730	14.000	7.694	6.064	4.548	4.708	4.354	4.741	4.134	9.855	14.430
17	17.840	37.470	12.000	7.928	4.750	3.901	4.238	4.019	5.061	5.822	15.150	13.530
18	16.230	35.490	11.870	7.608	4.790	4.552	4.089	4.603	4.074	15.720	15.070	12.270
19	14.530	30.140	12.880	7.791	4.637	4.814	4.034	6.714	4.376	9.815	16.670	11.250
20	14.230	30.870	12.540	8.939	4.597	4.624	3.702	7.252	3.789	6.815	18.620	18.570
21	13.840	28.780	12.220	6.739	4.639	5.849	3.984	4.892	4.123	5.373	13.740	20.970
22	14.110	24.390	10.950	6.260	4.001	6.693	4.163	4.530	3.404	4.920	11.330	17.650
23	23.120	22.700	10.780	6.558	3.955	5.006	4.192	3.613	2.666	4.440	10.040	16.450
24	21.270	20.960	11.110	6.873	3.859	4.582	4.245	4.029	5.016	4.593	12.930	15.190
25	51.100	22.020	10.710	6.657	3.740	5.196	4.270	4.018	4.728	4.898	12.910	35.200
26	40.010	32.700	10.730	6.452	3.867	4.932	4.066	3.990	4.182	8.306	11.230	70.400
27	52.810	39.180	9.872	6.100	4.021	5.059	4.141	3.985	4.200	7.017	10.560	59.490
28	87.230	53.770	9.327	5.166	4.138	4.775	4.172	3.961	4.064	13.240	9.655	55.290
29	58.890		9.134	5.475	4.118	4.356	4.237	3.858	4.238	15.010	9.245	58.310
30	57.090		8.368	5.379	3.980	5.111	4.181	3.935	6.714	10.520	8.225	47.810
31	61.620		8.077		4.121		4.030	4.018		16.260		39.230
Average	25.440	40.330	18.070	7.252	4.709	4.646	4.505	4.251	4.104	6.563	10.670	24.260
Lowest	13.490	20.960	8.077	5.166	3.740	3.867	3.702	3.613	2.666	3.680	6.255	6.564
Highest	87.230	89.870	45.360	9.026	6.553	6.693	7.078	7.252	6.714	16.260	18.620	70.400
Peak flow	116.90	123.80	55.00	10.13	7.82	9.29	8.86	9.15	8.69	20.70	21.98	90.93
Day of peak	28	7	1	20	15	22	4	20	30	29	20	26
Monthly total (million cu m)	68.14	97.57	48.39	18.80	12.61	12.04	12.07	11.39	10.64	17.58	27.66	64.98
Runoff (mm)	65	93	46	18	12	11	11	11	10	17	26	62
Rainfall (mm)	141	136	35	43	26	90	36	58	60	142	72	138

Statistics of monthly data for previous record (Jan 1936 to Dec 1989—incomplete or missing months total 0.9 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	29.950	28.450	23.120	18.300	12.810	10.240	8.762	9.111	10.390	13.750	21.430	26.130
	Low	9.749	8.084	9.110	7.678	6.284	4.805	4.211	3.647	3.955	4.155	4.304	8.480
	(year)	1963	1963	1976	1976	1976	1976	1976	1976	1959	1959	1975	1975
	High	67.000	76.780	69.530	39.590	26.410	20.220	28.660	33.840	32.940	35.130	54.320	88.690
	(year)	1939	1977	1947	1966	1967	1987	1958	1956	1946	1960	1940	1965
Runoff	Avg	76	66	59	45	33	25	22	23	26	35	53	66
	Low	25	19	23	19	16	12	11	9	10	11	11	22
	High	170	176	177	97	67	50	73	86	81	89	134	225
Rainfall	Avg	104	78	78	66	69	71	76	83	81	89	104	101
	Low	33	8	16	8	15	15	16	10	3	17	16	20
	High	215	236	185	132	163	188	158	185	199	178	232	246

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre 1990
Mean flow (m^3s^{-1})	12.740		17.650		72
Lowest yearly mean			9.625	1976	
Highest yearly mean			25.200	1966	
Lowest monthly mean	4.104	Sep	3.647	Aug 1976	
Highest monthly mean	40.330	Feb	88.690	Dec 1965	
Lowest daily mean	2.666	23 Sep	1.663	28 Aug 1984	
Highest daily mean	89.870	7 Feb	334.200	10 Dec 1965	
Peak	123.800	7 Feb			
10% exceedance	34.690		36.470		95
50% exceedance	6.734		12.090		56
95% exceedance	3.836		4.936		78
Annual total (million cu m)	401.80		557.00		72
Annual runoff (mm)	381		528		72
Annual rainfall (mm)	977		1000		98
[1941-70 rainfall average (mm)			1016]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Ten-channel, interleaved cross path US gauge in the centre of Derby, 1.75km ds of Longbridge Weir (28010). Record continuous with 28010. Peak flows from 1976 only. At high flows Derby may flood but bypassing small. Substantial flow modification owing to Derwent reservoirs, milling and PWS abstractions. Large, predominantly upland catchment draining Millstone Grit and Carb Lst. Lower reaches drain Coal Measures on the lb and Triassic sandstones and marls on the rb. Peat moorland headwaters; forestry, pasture and some arable.

030001 Witham at Claypole Mill 1990

Measuring authority: NRA-A
First year: 1959
Grid reference: 43 (SK) 842 480
Level stn. (m OD): 16.90
Catchment area (sq km): 297.9
Max alt. (m OD): 158

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.662	4.398	10 090	1.470	0 845	0.514	0.536	0 404	0.426	0 452	0 609	0 527
2	1.697	5 851	5.764	1 459	0 748	0.542	0 495	0 375	0.430	0.394	0.516	0.549
3	1.645	4.294	4.394	1.476	0.736	0.632	0.472	0.296	0 413	0 379	0 503	0 532
4	1.609	3.982	3.775	1 325	0 698	0 582	1 002	0 290	0 410	0 377	0.455	0.515
5	1.579	3.204	3 481	1.313	0.745	0 600	0.676	0.339	0 397	0 361	0 443	0 506
6	1.712	2.912	3 375	1.308	0.723	0 632	0.557	0.345	0 406	0 414	0 420	0 516
7	1.654	6 712	2.998	1 235	0.769	0 635	0 809	0 414	0 410	0.446	0.377	0.538
8	1.745	9 137	2.825	1.201	0.727	0 844	0.601	0 389	0 399	0 411	0 344	0 714
9	1.744	5.149	2.663	1 198	0 815	0 794	0 531	0 390	0 414	0.419	0 441	0.785
10	1.743	4 499	2 568	1.188	0.879	0 629	0 486	0 326	0 395	0 445	0 437	0 902
11	1.636	4 268	2 450	1 184	0 816	0 614	0 463	0 337	0 395	0 439	0 483	0 837
12	1.673	4.138	2.385	1.113	0 821	0.632	0 429	0 317	0 375	0.368	0 692	0.711
13	1.572	3.847	2 444	1.193	0 738	0 622	0 405	0 305	0.352	0.348	0.561	0 627
14	1.568	4.042	2.356	1.247	0.706	0.563	0 378	0 274	0 378	0 393	0 570	0 636
15	1 569	5.438	2.314	4.403	0.862	0.481	0.435	0 329	0 383	0 443	0 482	0 616
16	1.446	4.339	2.168	1 521	0.848	0 528	0.490	0 343	0 399	0 419	0.473	0.612
17	1 395	3 820	2 099	1.020	0 667	0 500	0 407	0 323	0 392	0 485	1.218	0 584
18	1.448	3.456	2.003	1.048	0 649	0 467	0 420	0 322	0 298	3 010	0.771	0.605
19	1.413	3.167	2.182	1.144	0 870	0 488	0.420	0.323	0 354	0 920	0 691	0 593
20	1 397	3 034	2 004	1.258	0 681	0 503	0 403	0.323	0.350	0 669	1.301	0 594
21	1 415	2.954	1.915	1.221	0.635	0.565	0.320	0.322	0.336	0 594	0 808	0 596
22	1.418	2 786	1 777	1 091	0 601	0 797	0 321	0 520	0 329	0 579	0.699	0.591
23	1.985	2.754	1.643	1.040	0 626	0.637	0 327	0.523	0 436	0 573	0 641	0 559
24	1.958	2 712	1 663	1.010	0 602	0 605	0 324	0 488	0 383	0 554	0.708	0 578
25	3.904	2.709	1.536	1.039	0.573	0 532	0.285	0 465	0 464	0 478	0 833	1 008
26	3 365	3 040	1.522	1 019	0 536	0 583	0 336	0 462	0 370	0.634	0 699	1 870
27	2.803	4 270	1.441	0 909	0 549	0.492	0 355	0 485	0 372	0 518	0 617	1 766
28	4 408	9 698	1 484	0 937	0 524	0 440	0 317	0 392	0 358	1.123	0 639	1 497
29	3.387		1 473	0 825	0 517	0 409	0 327	0 415	0 377	0.621	0.596	1.291
30	3.015		1 437	0 858	0 583	0 467	0 454	0.406	0 582	0 512	0 565	1 077
31	4 279		1 428		0 543		0.445	0.398		0 654		0.974
Average	2.059	4.307	2.634	1 275	0.691	0 578	0.459	0 375	0 392	0 595	0 613	0 784
Lowest	1 395	2 709	1 428	0 825	0 517	0 409	0 285	0 274	0.298	0 348	0.344	0.506
Highest	4 408	9 698	10 090	4 403	0 879	0 844	1 002	0.523	0 582	3.010	1.301	1.870
Peak flow	4.90	14 65	14.60	5 07	1.20	1.15	1.84	0 58	0 63	5 07	2.21	2.96
Day of peak	25	28	1	15	16	8	4	22	30	18	20	26
Monthly total (million cu m)	5 52	10 42	7 05	3.30	1 85	1 50	1 23	1.01	1 02	1.59	1.59	2.10
Runoff (mm)	19	35	24	11	6	5	4	3	3	5	5	7
Rainfall (mm)	54	83	14	22	14	46	30	42	26	71	49	49

Statistics of monthly data for previous record (May 1959 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2 862	3 225	2 923	2 453	1 792	1.143	0 795	0 787	0.721	0.955	1.391	2.114
	Low	0 673	0 492	0 453	0 365	0 311	0 184	0 063	0 136	0 232	0 218	0.278	0 312
	(year)	1965	1976	1978	1976	1976	1976	1976	1976	1959	1959	1959	1964
	High	5.857	10 690	6 995	5.748	4 695	3 141	2 118	2.376	2.885	3.906	6.525	7.879
	(year)	1988	1977	1979	1979	1983	1985	1968	1980	1968	1960	1960	1965
Runoff:	Avg.	26	26	26	21	16	10	7	7	6	9	12	19
	Low	6	4	4	3	3	2	1	1	2	2	2	3
	High	53	87	63	50	42	27	19	21	25	35	57	71
Rainfall:	Avg.	54	39	50	51	52	53	52	62	49	49	55	56
	Low	20	3	8	10	11	3	9	5	3	5	24	13
	High	117	140	92	103	130	148	132	127	127	137	115	142

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	1.211		1.756		69
Lowest yearly mean			0 594	1976	
Highest yearly mean			2 807	1979	
Lowest monthly mean	0 375	Aug	0 063	Jul 1976	
Highest monthly mean	4.307	Feb	10 690	Feb 1977	
Lowest daily mean	0 274	14 Aug	0 021	24 Jul 1976	
Highest daily mean	10 090	1 Mar	31 600	11 Feb 1977	
Peak	14 650	28 Feb	37.540	11 Feb 1977	
10% exceedance	2 985		3 810		78
50% exceedance	0 627		1 059		59
95% exceedance	0.329		0.349		94
Annual total (million cu m)	38 19		55.42		69
Annual runoff (mm)	128		186		69
Annual rainfall (mm)	500		622		80
[1941-70 rainfall average (mm)			631]		

Factors affecting flow regime

- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater
- Augmentation from effluent returns.

Station and catchment description

An old weir at three levels with a total width of 24.99m converted into a standard Lea designed broad-crested weir. It is rated theoretically and there is no bypassing or drowning. Low flows in summer are moderately influenced by transfer of water from Rutland Water (since 1985) and abstractions for public supply at Saltersford. The catchment is clay (50%) with limestone (40%) and gravel, and is largely rural.

032004 Ise Brook at Harrowden Old Mill 1990

Measuring authority: NRA-A
First year: 1943
Grid reference: 42 (SP) 898 715
Level stn. (m OD): 45.30
Catchment area (sq km): 194.0
Max alt. (m OD): 197

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.527	4.867	1.707	0.653	0.374	0.271	0.386	0.195	0.164	0.611	0.267	0.271
2	1.457	6.681	1.475	0.871	0.370	0.239	0.284	0.177	0.158	0.586	0.200	0.272
3	1.372	8.312	1.384	0.712	0.365	0.259	0.249	0.170	0.168	0.614	0.149	0.274
4	1.296	6.445	1.337	0.634	0.360	0.278	0.584	0.158	0.176	0.239	0.149	0.262
5	1.270	3.886	1.303	0.623	0.350	0.343	0.376	0.141	0.160	0.248	0.157	0.257
6	1.782	3.204	1.250	0.607	0.338	0.321	0.299	0.122	0.156	0.236	0.219	0.249
7	2.467	6.886	1.191	0.587	0.327	0.290	0.464	0.133	0.156	0.209	0.241	0.399
8	2.057	10.390	1.154	0.570	0.355	0.314	0.312	0.151	0.195	0.197	0.252	0.488
9	1.846	5.222	1.073	0.562	0.376	0.308	0.266	0.156	0.163	0.194	0.257	0.614
10	1.685	4.005	1.039	0.587	0.359	0.289	0.230	0.160	0.148	0.196	0.312	0.497
11	1.519	4.190	1.022	0.565	0.355	0.279	0.231	0.163	0.147	0.198	0.283	0.515
12	1.486	4.459	0.875	0.566	0.352	0.269	0.221	0.175	0.136	0.199	0.433	0.450
13	1.412	3.529	0.928	0.639	0.347	0.268	0.213	0.173	0.131	0.193	0.379	0.337
14	1.407	3.532	0.921	0.684	0.371	0.268	0.198	0.172	0.157	0.202	0.406	0.281
15	1.544	3.840	0.854	0.590	0.367	0.263	0.251	0.171	0.164	0.231	0.288	0.276
16	1.594	3.194	0.833	0.566	0.326	0.254	0.246	0.151	0.156	0.226	0.326	0.268
17	1.414	2.919	0.817	0.771	0.311	0.235	0.188	0.162	0.156	0.338	0.440	0.365
18	1.251	2.534	0.822	0.621	0.309	0.263	0.139	0.208	0.163	0.931	0.326	0.374
19	1.281	2.251	0.693	0.686	0.306	0.268	0.152	0.414	0.259	0.639	0.643	0.276
20	1.250	2.314	0.505	0.995	0.299	0.264	0.268	0.234	0.177	0.388	0.718	0.301
21	1.274	2.305	0.527	0.837	0.296	0.523	0.153	0.208	0.166	0.326	0.430	0.300
22	1.344	1.975	0.606	0.690	0.295	0.419	0.183	0.182	0.153	0.209	0.412	0.321
23	2.866	1.847	0.953	0.602	0.291	0.352	0.175	0.192	0.162	0.158	0.347	0.326
24	2.728	1.816	0.835	0.527	0.266	0.305	0.171	0.173	0.253	0.199	0.338	0.405
25	2.774	2.001	0.718	0.486	0.317	0.281	0.142	0.170	0.350	0.307	0.357	0.730
26	2.313	2.098	0.718	0.461	0.291	0.267	0.171	0.178	0.182	0.394	0.335	0.894
27	2.028	2.195	0.474	0.433	0.275	0.260	0.184	0.154	0.150	0.431	0.293	0.705
28	3.401	1.952	0.609	0.419	0.269	0.231	0.205	0.160	0.184	0.572	0.313	0.670
29	2.934		0.751	0.377	0.265	0.222	0.227	0.152	0.478	0.621	0.293	0.794
30	3.445		0.576	0.398	0.271	0.296	0.322	0.146	0.500	0.409	0.277	0.744
31	4.455		0.658		0.266		0.229	0.164		0.354		0.643
Average	1.951	3.887	0.923	0.611	0.323	0.290	0.249	0.178	0.198	0.350	0.328	0.437
Lowest	1.250	1.816	0.474	0.377	0.265	0.222	0.139	0.122	0.131	0.158	0.149	0.249
Highest	4.455	10.390	1.707	0.995	0.376	0.523	0.584	0.414	0.500	0.931	0.718	0.894
Peak flow	5.08	10.90	1.83	1.66	0.47	0.83	0.90	0.55	0.85	1.69	1.95	1.22
Day of peak	31	8	1	20	16	21	4	19	24	3	19	25
Monthly total (million cu m)	5.22	9.40	2.47	1.58	0.87	0.75	0.67	0.47	0.51	0.94	0.85	1.17
Runoff (mm)	27	48	13	8	4	4	3	2	3	5	4	6
Rainfall (mm)	56	80	14	37	6	37	35	20	33	58	47	53

Statistics of monthly data for previous record (Dec 1943 to Dec 1989—incomplete or missing months total 0.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	2.493	2.598	2.274	1.585	1.124	0.753	0.564	0.538	0.506	0.744	1.379	1.952
	Low	0.459	0.324	0.219	0.330	0.143	0.128	0.166	0.110	0.128	0.185	0.178	0.218
	(year)	1944	1944	1944	1948	1944	1944	1945	1944	1949	1947	1947	1947
	High	6.441	6.948	7.984	3.835	3.606	2.421	3.018	2.656	2.315	4.384	5.330	5.827
	(year)	1959	1977	1947	1979	1967	1981	1958	1980	1968	1960	1960	1965
Runoff:	Avg	34	33	31	21	16	10	8	7	7	10	18	27
	Low	6	4	3	4	2	2	2	2	2	3	2	3
	High	89	87	110	51	50	32	42	37	31	61	71	80
Rainfall:	Avg	54	42	50	46	54	55	51	65	53	53	59	59
	Low	15	3	5	8	10	5	5	3	3	5	10	13
	High	112	115	127	109	130	141	109	139	127	137	132	123

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	0.790		1.370		58
Lowest yearly mean			0.422	1944	
Highest yearly mean			2.337	1960	
Lowest monthly mean	0.176	Aug	0.110	Aug 1944	
Highest monthly mean	3.887	Feb	7.984	Mar 1947	
Lowest daily mean	0.122	6 Aug	0.048	18 Aug 1944	
Highest daily mean	10.390	8 Feb	21.360	15 Aug 1980	
Peak	10.900	8 Feb	28.390	17 Mar 1947	
10% exceedance	1.950		3.015		65
50% exceedance	0.344		0.749		46
95% exceedance	0.154		0.206		74
Annual total (million cu m)	24.91		43.23		58
Annual runoff (mm)	128		223		58
Annual rainfall (mm)	476		641		74
[1941-70 rainfall average (mm)			631]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Flume with low flow notch and side weir to 1965, compound Crump profile weir to April 1976, and theoretically-rated Flat V weir with 5.94m crest since. Crump weir modular to 15.6 cumecs, but bypassed at 14.2m. Flat V also bypassed. Two small storage reservoirs with minor influence on low flows. Underlain by clay (59%) and sandstone (24%), mostly rural but includes Kettering.

033002 Bedford Ouse at Bedford 1990

Measuring authority: NRA-A
First year: 1933
Grid reference: 52 (TL) 055 495
Level stn. (m OD): 24.70
Catchment area (sq km): 1460.0
Max alt. (m OD): 247

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	13.700	53.300	16 600	5.900	3.800	2.400	2.200	1.900	1.400	3.400	3.600	2.200
2	13 100	52 100	14.900	6 200	3.700	2.500	2 800	1.700	1.200	3.100	3.300	2.100
3	12 400	69.300	12 400	7.200	3.500	2.700	2.600	1 700	1 200	2.900	2.900	1.900
4	11.600	76.400	12.100	6.500	3 200	2 700	2.800	1.500	1 200	2.700	2.800	1.900
6	10 700	95 300	11.900	5 900	3.200	2.700	3 200	1.400	1.400	2.600	2.700	2.000
8	14 100	90 400	11.600	5 700	3 300	2 600	3.400	1.200	1.400	2.500	2.300	2.000
7	35.600	53 900	11.600	5.300	3.200	2.700	3.300	1.100	1.400	2.300	2.200	2.100
8	35.100	62.600	11 000	5 600	3 500	3.400	3.800	1.100	1.400	2.200	2 000	2.200
9	24.400	73.700	10.500	5.700	3 400	3.800	3.200	1.200	1 300	2 100	2.100	2.500
10	19.300	70.700	9.900	5 300	3 400	3 800	2.900	1 300	1.400	2 000	2.200	2.800
11	18.000	45.100	9.800	5.200	3.500	3.300	2.500	1.200	1.400	1.800	2.300	4.500
12	15.400	47 500	9 800	5 600	3 500	3 000	2.400	1 100	1 400	2 800	2.400	4.800
13	16.600	51.300	9.800	5.300	3.500	2 800	2.200	1.200	1.400	3 000	3 000	3 200
14	19 500	42 200	9 900	6.000	3.500	2.800	2 100	1.200	1.400	2.200	3.400	2.500
15	16.600	42.800	9.300	5 400	3.700	2.700	2.000	1 300	1 400	2.100	3 800	2 200
16	15.400	39 500	8 900	5 300	3 800	2.600	1 900	1 300	1 300	2.000	3 300	2.100
17	13.700	30.600	8.600	5.300	3.500	2.500	1.900	1 800	1 400	2.100	3.200	2 100
18	12.400	26 000	8.600	5.700	3 400	2.500	1.700	1.700	1.400	2.200	3.100	2 500
19	11.200	22.700	7.100	6 000	3.100	2.400	1 400	2 100	1.500	4 200	3 000	2.300
20	10 800	21 300	9.900	7 100	3 100	2.400	1 400	2 500	1 700	4 300	3.100	2 200
21	10 200	20 500	9.100	7 400	3.100	3 000	1.500	2 700	1 700	3.500	3.300	3.300
22	10.500	20 000	7.800	6.400	3.000	2.800	1.500	2.200	1.800	2.800	3.200	3 500
23	15.400	16.900	7.200	5 700	2.700	3 500	1.400	2 000	1.700	2.500	3.100	3.200
24	33.200	16 200	6.700	5 100	2 400	3.500	1 400	1.900	1.800	2.100	2.400	3.200
25	32.200	16 000	6 700	4.800	2.300	3.300	1 400	1.700	1.900	2.200	2.200	4.300
26	34.100	18.500	6.700	4.500	2.400	2.700	1.400	1.600	1.900	2.600	1.900	7.300
27	26.300	19 800	6 400	4 200	2.300	2.500	1.400	1.500	2 000	3.800	2.200	8.700
28	21.900	17 700	6 200	4.100	2 300	2 300	1 400	1 500	1.900	3.800	2 600	6 700
29	27 600		6.000	4 000	2.300	2.200	1.500	1 400	2.000	4 300	2 700	5 200
30	30.100		5.900	4 000	2.300	1.900	1.400	1.400	2 200	4 300	2.400	5.400
31	46 300		5 800		2 300		1 500	1 300		4.200		5.700
Average	20.240	43.300	9.308	5.547	3 103	2 800	2 113	1.571	1.550	2.858	2.757	3.439
Lowest	10 200	16 000	5 800	4 000	2 300	1.900	1 400	1 100	1.200	1.800	1.900	1.900
Highest	46.300	95 300	16 600	7 400	3 800	3.800	3 800	2 700	2.200	4 300	3 800	8 700
Peak flow	50.40	102 00	17.00	8 20	4.30	4.50	4.30	3.00	2.60	4.90	4.10	9.30
Day of peak	31	5	1	21	18	21	8	20	30	19	15	27
Monthly total (million cu m)	54.21	104.70	24.93	14 38	8.31	7.28	5.66	4.21	4 02	7.65	7 14	9 21
Runoff (mm)	37	72	17	10	6	5	4	3	3	5	5	6
Rainfall (mm)	69	92	16	33	6	44	23	25	31	59	32	58

Statistics of monthly data for previous record (Jan 1933 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	19 640	19 970	17 310	11 490	7 231	4 646	3 260	2 819	2.830	5 497	11 160	15 500
	Low	2 608	2 232	2 410	1 996	1 411	0 483	0.100	0 040	0 268	0.454	1 152	1 531
	(year)	1934	1965	1944	1976	1934	1934	1934	1934	1934	1934	1934	1964
	High	55.190	53.300	62.020	31.470	28 280	14 280	19 080	14 400	18 000	30 420	43.800	40.400
	(year)	1939	1977	1947	1951	1983	1985	1968	1980	1968	1987	1960	1960
Runoff:	Avg.	38	33	32	20	13	8	6	5	5	10	20	28
	Low	5	4	4	4	3	1	0	0	0	1	2	3
	High	101	88	114	56	52	25	35	26	32	56	78	74
Rainfall:	Avg.	57	42	50	45	55	53	53	61	53	60	63	61
(1934-	Low	14	3	5	3	10	8	5	3	3	4	10	13
1989)	High	124	111	140	96	113	119	120	138	110	147	178	134

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	7.982		10 070		79
Lowest yearly mean			2.401	1934	
Highest yearly mean			18 890	1937	
Lowest monthly mean	1 550	Sep	0 040	Aug 1934	
Highest monthly mean	43 300	Feb	62.020	Mar 1947	
Lowest daily mean	1.100	7 Aug	0 008	31 Aug 1934	
Highest daily mean	95.300	5 Feb	278.100	15 Mar 1947	
Peak	102.000	5 Feb			
10% exceedance	18.710		26.440		71
50% exceedance	3.146		4.644		68
95% exceedance	1.394		0.914		152
Annual total (million cu m)	251 70		317.80		79
Annual runoff (mm)	172		218		79
Annual rainfall (mm)	488		653		75
[1941-70 rainfall average (mm)			648]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from effluent returns.

Station and catchment description

3 broad-crested weirs, 30m, 20m and 12m wide supplemented by 3 vertical sluice gates which are either fully open or shut. High flow rating confirmed by current meter measurements. Records before 1959 based on daily gauge board readings and gate openings. In 1972, station built at Roxton (d/s) - to achieve a better record. Significant surface water and groundwater abstractions in catchment for PWS. Geology - predominantly clay. Land use - agricultural with substantial urban development over last 15 years (inc. Milton Keynes)

034006 Waveney at Needham Mill 1990

Measuring authority: NRA-A
First year: 1963
Grid reference: 62 (TM) 229 811
Level stn. (m OD): 16.50
Catchment area (sq km): 370.0
Max alt. (m OD): 65

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0 590	2 852	6.715	0 562	0 424	0 568	0 239	0 187	0 242	0 378	0 500	0 882
2	0 600	2 405	3 960	0.769	0 470	0 611	0.253	0.253	0 265	0 375	0 480	0 792
3	0 600	8 805	2 862	1 244	0 514	0 670	0 266	0 295	0 258	0 382	0 530	0 696
4	0.579	14.890	2 395	0.872	0 526	0 707	0 279	0.287	0 275	0 382	0 560	0 631
5	0 575	7.545	2 119	0 698	0 499	0 695	0 325	0 244	0 311	0.393	0.640	0 579
6	0 619	4 107	1 849	0 585	0 459	0 687	0 323	0 212	0 277	0 380	0.499	0 581
7	0.707	3 629	1.586	0 582	0 447	0 590	0 318	0 237	0 262	0 341	0 455	0 546
8	0 799	3 623	1 264	0 558	0 448	0 455	0.291	0 321	0 235	0 326	0 426	0 559
9	0.833	2.821	1.123	0 539	0 459	0 389	0 261	0.276	0 220	0 342	0 408	0 721
10	0 828	2.573	1 018	0 543	0 485	0 366	0 254	0.315	0.215	0 348	0 390	1 019
11	0 787	2 410	0 942	0 537	0 629	0 342	0 250	0 304	0.222	0 348	0 371	0.972
12	0.748	2.147	0 988	0 528	0 763	0.340	0 238	0.225	0 236	0 346	0 371	0.929
13	0 716	1.723	0 822	0 646	0.685	0 343	0 238	0 254	0 279	0 367	0 425	0 855
14	0.719	1 621	0 837	0 803	0 583	0.345	0 228	0 343	0 299	0 319	0 518	0 764
15	1 020	2 542	0.777	0 778	0 534	0 352	0 191	0 327	0 288	0.352	0.539	0.650
16	0 614	2 726	0.756	0 665	0 475	0 339	0 204	0 365	0 283	0.426	0.516	0 599
17	0 856	2.258	0 731	0.588	0.418	0 328	0 227	0.336	0.301	0 411	0.544	0 582
18	0 753	1 844	0 698	0 585	0 379	0 327	0 215	0 342	0 313	1.858	0.534	0.591
19	0 711	1 740	0 857	0 702	0 361	0 326	0 218	0 382	0 318	1 188	0 523	0 583
20	0 656	1 453	1 258	0 755	0 338	0 322	0 230	0 373	0.317	0 711	0.722	0 609
21	0 610	1.408	1 020	0 727	0 328	0 334	0 261	0 346	0 337	0 525	0 742	0.683
22	0 654	1 224	0 862	0 651	0 331	0 421	0 231	0 348	0 340	0 469	0.598	0 695
23	1 172	1 160	0 774	0 597	0 320	0 401	0 209	0 334	0 311	0 428	0 546	0 657
24	1.282	1.163	0.737	0.576	0 331	0 364	0 198	0 332	0 309	0 437	0 541	0 628
25	1 546	1.202	0 707	0 543	0 328	0 319	0.222	0 348	0.376	0 465	0 561	0 818
26	1 492	1 449	0 673	0 531	0 316	0 311	0 260	0 309	0 365	0.578	2.674	1.808
27	1 197	2 650	0.657	0 519	0 291	0 276	0 248	0 304	0 335	0 776	4 624	2 249
28	1.063	4 378	0 660	0.552	0.287	0 251	0 249	0 296	0 297	0.826	2 035	1 551
29	1 077		0 624	0 473	0 290	0 236	0 229	0 291	0 321	0 772	1.163	1 513
30	1.133		0 582	0 439	0.528	0 234	0 165	0.285	0 371	0.600	1.049	2 017
31	1.970		0 564		0 578		0 179	0 270		0 540		1 777
Average	0 886	3 155	1.336	0 638	0 446	0 408	0 242	0 301	0 293	0 529	0 816	0 920
Lowest	0.575	1 160	0.564	0 439	0 287	0 234	0 165	0.187	0 215	0 319	0.371	0 546
Highest	1 970	14 890	6.715	1 244	0 763	0 707	0 325	0 382	0 376	1.858	4.624	2.249
Peak flow	3 01			1.36	0 78	0 72	0 33	0 42	0 40			2 59
Day of peak	31			3	12	4	5	14	26			27
Monthly total (million cu m)	2.37	7 63	3 58	1 65	1 19	1 06	0 65	0 81	0 76	1.42	2.11	2.46
Runoff (mm)	6	21	10	4	3	3	2	2	2	4	6	7
Rainfall (mm)	47	76	17	46	21	42	19	24	34	81	80	44

Statistics of monthly data for previous record (Dec 1963 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	4.215	3 378	2 751	2 073	1.151	0 786	0 542	0 741	0 863	1 197	1 815	2.805
	Low	0 609	0 722	0 591	0 487	0 369	0 285	0 285	0 281	0 261	0 330	0 388	0 492
	(year)	1973	1965	1973	1974	1974	1974	1974	1973	1964	1989	1989	1964
	High	14 260	10 670	7 665	5 646	3.254	4 302	1 197	6 958	9 753	10 260	8 852	8.379
	(year)	1988	1979	1981	1983	1969	1985	1987	1987	1968	1987	1974	1965
Runoff	Avg	31	22	20	15	8	6	4	5	6	9	13	20
	Low	4	5	4	3	3	2	2	2	2	2	3	4
	High	103	70	55	40	24	30	9	50	68	74	62	61
Rainfall	Avg	53	37	45	45	46	52	48	51	51	53	61	55
	Low	16	10	10	9	5	10	11	7	2	4	25	18
	High	122	72	96	86	97	132	93	110	161	118	150	100

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	0 815		1 854		
Lowest yearly mean			0 537	1973	
Highest yearly mean			3 366	1987	
Lowest monthly mean	0 242	Jul	0 261	Sep 1964	
Highest monthly mean	3 155	Feb	14 260	Jan 1988	
Lowest daily mean	0 165	30 Jul	0.189	23 Aug 1973	
Highest daily mean	14 890	4 Feb	89 760	16 Sep 1968	
Peak			113.300	16 Sep 1968	
10% exceedance	1.571		4 205		37
50% exceedance	0 536		0 804		67
95% exceedance	0 230		0 322		71
Annual total (million cu m)	25 70		58.51		44
Annual runoff (mm)	69		158		44
Annual rainfall (mm)	531		597		89
[1941-70 rainfall average (mm)			603]		

Factors affecting flow regime

- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from surface water and/or groundwater.

Comment

Flows from 30/10/90 to 5/11/90 are estimated

Station and catchment description

A compound Crump weir 8.5 m wide in the main channel with a single crested Crump in the mill bypass. Sluice action at a mill 2.4 km upstream is infrequent but is evident in flow records. Surface water abstractions, and the use of river gravels as an aquifer, influence flows but the overall impact is minimal. Was affected by the Waveney Groundwater Scheme between 1975 and 1979. Predominantly a Boulder Clay catchment with largely rural land use.

036006 Stour at Langham 1990

Measuring authority: NRA-A
First year: 1962
Grid reference 62 (TM) 020 344
Level stn. (m OD): 6.40
Catchment area (sq km): 578.0
Max alt. (m OD): 128

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	1.659	11.390	2.178	1.783	2.590	1.842	1.651	0.841	0.864	1.280	2.130	3.111
2	1.543	9.207	2.444	1.860	3.481	1.895	1.444	0.799	0.824	1.218	2.291	3.289
3	1.420	14.490	2.700	2.161	2.754	1.954	1.433	0.835	0.823	1.122	2.082	3.433
4	1.160	22.900	1.848	1.832	2.867	1.815	1.573	0.813	0.718	1.091	1.921	3.292
5	1.522	30.480	2.215	1.819	2.742	1.804	1.276	0.780	0.667	1.115	1.352	3.361
6	1.737	13.920	2.150	1.772	2.010	1.961	1.293	0.742	0.647	1.066	2.146	3.305
7	4.186	8.833	2.467	2.134	2.023	1.899	1.200	0.812	0.854	1.016	2.112	3.521
8	4.780	10.940	1.780	2.170	2.070	2.000	1.070	0.810	0.640	0.950	2.240	3.510
9	3.205	7.574	1.992	2.189	2.033	2.101	1.042	0.820	0.664	0.932	2.542	3.428
10	3.125	6.180	1.947	2.711	2.196	2.055	0.829	0.808	0.695	0.919	2.540	3.460
11	3.250	5.378	1.897	3.375	2.598	2.019	0.893	0.708	0.775	0.955	2.540	2.406
12	3.112	4.802	1.752	3.284	2.434	2.000	0.943	0.739	0.796	1.015	2.613	2.542
13	3.016	4.807	1.856	3.302	3.206	1.987	0.913	0.702	0.799	0.955	2.746	2.340
14	2.866	7.862	1.922	2.989	2.447	1.968	0.908	0.736	0.985	0.840	2.895	2.570
15	4.196	9.139	1.886	2.537	2.140	1.839	0.945	0.838	0.808	0.799	2.833	3.051
16	5.710	8.590	1.890	2.750	2.170	1.980	1.090	0.830	0.720	0.850	2.830	3.050
17	4.350	5.384	1.823	2.839	2.175	1.915	1.060	0.916	0.924	0.805	2.954	3.140
18	3.109	4.658	1.840	2.798	1.957	1.833	0.996	0.907	0.949	0.872	2.968	3.208
19	2.927	3.297	1.928	3.234	2.084	1.829	0.909	1.207	0.848	0.857	3.104	3.245
20	2.676	3.335	2.353	3.383	2.051	1.779	0.838	1.137	0.803	0.790	3.405	3.226
21	2.377	3.167	2.368	2.542	2.121	1.917	0.766	1.018	0.857	0.784	3.103	3.355
22	2.540	2.749	2.136	2.638	2.004	2.029	0.789	0.897	0.853	0.811	3.118	3.414
23	2.639	2.593	1.945	2.534	2.025	1.908	0.787	0.795	0.918	1.013	3.061	3.368
24	2.680	2.620	1.880	2.940	1.950	1.790	0.750	0.850	0.950	1.760	3.020	3.340
25	3.181	2.778	1.863	3.002	2.036	2.059	0.607	0.842	0.988	1.618	2.846	3.759
26	4.879	3.121	1.790	2.915	1.948	2.213	0.730	0.781	0.965	1.914	3.878	4.103
27	3.597	3.095	1.614	2.983	1.809	2.500	0.739	0.733	0.969	2.223	3.956	3.904
28	2.595	2.727	1.794	2.950	1.816	2.384	0.762	0.736	0.945	2.407	3.466	3.696
29	3.331		1.693	3.088	1.801	2.500	0.793	0.751	0.937	2.325	3.399	3.949
30	3.528		1.715	3.064	1.812	2.156	0.734	0.810	1.223	2.053	3.432	4.084
31	7.417		1.650		1.759		0.875	0.803		2.210		3.968
Average	3.171	7.715	1.978	2.653	2.229	1.998	0.988	0.832	0.847	1.244	2.784	3.336
Lowest	1.160	2.593	1.614	1.772	1.759	1.779	0.607	0.702	0.640	0.784	1.352	2.340
Highest	7.417	30.480	2.700	3.383	3.481	2.500	1.651	1.207	1.223	2.407	3.956	4.103
Peak flow	11.22	34.32	3.17	4.65	6.14	2.82	1.95	1.39	1.54	2.50	5.06	4.99
Day of peak	31	5	3	29	13	29	1	19	30	28	27	27
Monthly total (million cu m)	8.49	18.66	5.30	6.88	5.97	5.18	2.65	2.23	2.19	3.33	7.22	8.93
Runoff (mm)	15	32	9	12	10	9	5	4	4	6	12	15
Rainfall (mm)	53	70	16	40	16	36	13	33	33	43	50	46

Statistics of monthly data for previous record (Oct 1962 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.616	4.982	4.821	3.693	2.386	1.644	1.126	1.169	1.162	1.958	2.865	4.045
	Low	1.398	0.883	1.597	1.217	0.758	0.454	0.191	0.210	0.395	0.510	0.578	0.692
	(year)	1965	1965	1976	1974	1974	1965	1976	1976	1964	1970	1964	1964
	High	16.080	12.980	9.775	9.334	7.253	5.999	2.957	6.236	4.945	13.170	11.340	10.550
	(year)	1988	1979	1981	1983	1983	1987	1987	1987	1968	1987	1974	1965
Runoff:	Avg.	26	21	22	17	11	7	5	5	5	9	13	19
	Low	6	4	7	5	4	2	1	1	2	2	3	3
	High	75	54	45	42	34	27	14	29	22	61	51	49
Rainfall:	Avg.	49	34	48	45	47	53	47	51	50	51	58	53
	Low	14	13	12	11	7	10	8	11	1	3	20	13
	High	125	83	93	99	100	132	93	105	118	128	155	107

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	2.443		2.947		83
Lowest yearly mean			1.428	1973	
Highest yearly mean			5.119	1987	
Lowest monthly mean	0.832	Aug	0.191	Jul 1976	
Highest monthly mean	7.715	Feb	16.080	Jan 1988	
Lowest daily mean	0.607	25 Jul	0.094	9 Jul 1976	
Highest daily mean	30.480	5 Feb	50.280	12 Oct 1987	
Peak	34.320	5 Feb	91.000	17 Sep 1968	
10% exceedance	3.509		6.379		55
50% exceedance	2.011		1.704		118
95% exceedance	0.749		0.527		142
Annual total (million cu m)	77.04		93.00		83
Annual runoff (mm)	133		161		83
Annual rainfall (mm)	449		586		77
(1941-70 rainfall average (mm)			598)		

Factors affecting flow regime

- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Twin-trapezoidal flume, throat tapping. Spillway channel with weir constructed in 12/85 takes some flow above 1.45m. Bypassing also occurs over opposite bank above 1.85m. More bypassing possible from 0.5km u/s during extreme events. Naturalised flows to 9/76. Occasional high peaks due to gate action. Flow augmented by intermittent pumping from Ely/Ouse Transfer Scheme and occasional SAGS borehole pumping. Mainly rural catchment. Chalk outcrops in N, London Clay in S, all covered by semi-pervious Boulder Clay.

038003 Mimram at Panshanger Park 1990

Measuring authority: NRA-T
First year: 1952
Grid reference: 52 (TL) 282 133
Level stn. (m OD): 47.10
Catchment area (sq km): 133.9
Max alt. (m OD): 195

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0.471	0.811	0.756	0.664	0.539	0.474	0.391	0.270	0.297	0.281	0.240	0.236
2	0.464	0.660	0.742	0.771	0.541	0.432	0.367	0.266	0.284	0.265	0.268	0.234
3	0.459	1.380	0.734	0.681	0.545	0.550	0.363	0.260	0.272	0.321	0.237	0.231
4	0.456	0.778	0.731	0.657	0.532	0.437	0.408	0.247	0.253	0.258	0.233	0.229
5	0.458	0.733	0.731	0.647	0.513	0.454	0.383	0.254	0.262	0.268	0.234	0.230
6	0.665	0.886	0.729	0.637	0.508	0.451	0.397	0.257	0.254	0.240	0.235	0.231
7	0.515	1.120	0.725	0.623	0.500	0.490	0.457	0.263	0.242	0.233	0.233	0.240
8	0.488	0.844	0.727	0.618	0.507	0.525	0.373	0.249	0.248	0.238	0.232	0.267
9	0.473	0.798	0.717	0.606	0.506	0.451	0.364	0.242	0.245	0.234	0.242	0.359
10	0.472	0.844	0.715	0.607	0.559	0.438	0.362	0.245	0.251	0.235	0.250	0.279
11	0.464	0.970	0.718	0.599	0.529	0.429	0.356	0.257	0.248	0.230	0.236	0.264
12	0.515	0.832	0.724	0.603	0.519	0.415	0.353	0.252	0.248	0.228	0.360	0.246
13	0.465	0.923	0.729	0.728	0.514	0.416	0.345	0.253	0.241	0.225	0.301	0.240
14	0.464	0.909	0.721	0.628	0.510	0.405	0.331	0.253	0.241	0.223	0.261	0.233
15	0.472	0.841	0.713	0.621	0.502	0.410	0.320	0.351	0.240	0.230	0.242	0.229
16	0.470	0.821	0.713	0.622	0.524	0.402	0.321	0.258	0.244	0.220	0.237	0.228
17	0.461	0.802	0.708	0.623	0.488	0.396	0.317	0.344	0.241	0.223	0.253	0.227
18	0.456	0.789	0.705	0.679	0.479	0.398	0.311	0.307	0.240	0.232	0.235	0.224
19	0.457	0.784	0.873	0.662	0.472	0.403	0.306	0.564	0.256	0.231	0.274	0.223
20	0.451	0.805	0.740	0.643	0.470	0.390	0.302	0.312	0.237	0.218	0.263	0.251
21	0.484	0.813	0.721	0.663	0.458	0.531	0.292	0.288	0.231	0.220	0.241	0.258
22	0.480	0.769	0.706	0.629	0.456	0.449	0.289	0.282	0.247	0.221	0.237	0.227
23	0.720	0.766	0.702	0.591	0.451	0.411	0.291	0.279	0.248	0.221	0.248	0.226
24	0.566	0.765	0.703	0.575	0.458	0.408	0.280	0.276	0.257	0.236	0.306	0.239
25	0.598	0.844	0.692	0.561	0.446	0.398	0.281	0.408	0.244	0.347	0.288	0.488
26	0.493	0.831	0.690	0.560	0.452	0.395	0.283	0.295	0.241	0.377	0.332	0.414
27	0.594	0.782	0.690	0.544	0.440	0.391	0.287	0.290	0.238	0.362	0.259	0.264
28	0.538	0.802	0.686	0.543	0.435	0.387	0.285	0.292	0.239	0.331	0.249	0.277
29	0.586		0.679	0.535	0.433	0.389	0.281	0.335	0.388	0.257	0.246	0.351
30	0.795		0.675	0.533	0.438	0.403	0.280	0.301	0.570	0.247	0.242	0.262
31	0.728		0.672		0.431		0.273	0.300		0.241		0.366
Average	0.522	0.846	0.718	0.622	0.489	0.431	0.331	0.292	0.265	0.255	0.257	0.267
Lowest	0.451	0.660	0.672	0.533	0.431	0.387	0.273	0.242	0.231	0.218	0.232	0.223
Highest	0.795	1.380	0.873	0.771	0.559	0.550	0.457	0.564	0.570	0.377	0.360	0.488
Peak flow	1.43	2.51	1.31	1.00	0.67	0.86	0.73	0.80	1.27	0.84	0.62	1.00
Day of peak	30	3	19	13	10	3	7	19	30	25	12	25
Monthly total (million cu m)	1.40	2.05	1.92	1.61	1.31	1.12	0.89	0.78	0.69	0.68	0.67	0.71
Runoff (mm)	10	15	14	12	10	8	7	6	5	5	5	5
Rainfall (mm)	79	99	16	33	4	42	16	43	36	49	41	62

Statistics of monthly data for previous record (Dec 1952 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	0.582	0.641	0.668	0.660	0.620	0.563	0.489	0.449	0.420	0.416	0.452	0.508
	Low	0.244	0.289	0.259	0.261	0.216	0.187	0.163	0.145	0.195	0.175	0.176	0.189
	(year)	1974	1973	1973	1973	1976	1976	1976	1976	1973	1973	1973	1973
	High	1.102	1.167	1.119	1.050	1.084	0.971	0.803	0.764	0.632	0.638	0.739	1.005
	(year)	1961	1961	1961	1979	1979	1979	1979	1979	1968	1968	1960	1960
Runoff	Avg	12	12	13	13	12	11	10	9	8	8	9	10
	Low	5	5	5	5	4	4	3	3	4	4	3	4
	High	22	21	22	20	22	19	16	15	12	13	14	20
Rainfall	Avg	55	41	49	46	51	59	54	57	55	62	61	63
	Low	11	3	3	5	8	5	5	7	5	5	20	13
	High	121	96	116	105	115	122	123	127	121	171	151	141

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	0.438		0.539		81
Lowest yearly mean			0.231	1973	
Highest yearly mean			0.767	1961	
Lowest monthly mean	0.255	Oct	0.145	Aug 1976	
Highest monthly mean	0.846	Feb	1.167	Feb 1961	
Lowest daily mean	0.218	20 Oct	0.135	21 Aug 1976	
Highest daily mean	1.380	3 Feb	2.050	29 Jan 1988	
Peak	2.510	3 Feb	3.541	30 May 1979	
10% exceedance	0.733		0.794		92
50% exceedance	0.396		0.509		78
95% exceedance	0.229		0.250		92
Annual total (million cu m)	13.83		17.00		81
Annual runoff (mm)	103		127		81
Annual rainfall (mm)	520		653		80
[1941-70 rainfall average (mm)			641]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Flow reduced by industrial and/or agricultural abstractions.

Station and catchment description

Critical-depth flume; 5m overall width. Theoretical calibration confirmed by gaugings. All flows contained. Net export of water, considerable groundwater abstraction in headwaters. Very high baseflow component. A predominantly permeable catchment (Upper Chalk - overlain by glacial deposits near headwaters); mainly rural but some urbanisation in the lower valley.

039001 Thames at Kingston 1990

Measuring authority: NRA-T
First year: 1883
Grid reference: 51 (TQ) 177 698
Level stn. (m OD): 4.70
Catchment area (sq km): 9948.0
Max alt. (m OD): 330

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	92.300	329 000	148.000	48.300	23 400	9.220	8 090	3 990	3 920	8 720	4 610	3.500
2	84.300	333.000	135 000	50.500	23.700	8.270	7.450	3.920	3 500	6 340	3.100	3.290
3	75.500	374 000	116 000	49 400	25 600	7.190	5 960	4 100	3.280	7.150	3.310	4.390
4	65.700	405.000	101.000	47.000	21.900	8.920	6 880	3.230	3 540	3 210	3.290	2.820
5	58 800	365 000	101 000	50 200	24.600	8 070	8.170	3 050	3.500	3.130	2 880	3.480
6	66.900	334 000	96.900	47.800	23.300	6.920	7 060	3 440	3.270	3.350	2 340	3 070
7	155.000	361 000	93 200	48 800	21.500	11 800	6 340	4 810	3.490	3 240	2 580	3 000
8	131 000	400 000	87 700	46.100	16.400	11.300	6.620	3 640	3.910	3.800	2 850	2 670
9	108.000	373 000	88.300	40 500	17.300	9 580	5 850	3 830	3 440	3 200	3 090	3 630
10	92.700	347 000	86 900	36.400	20.600	6.580	10.200	3.950	2.740	3.680	5.380	3 950
11	87.100	336 000	80 600	37.800	25 900	8.740	10.900	3.980	3 350	3.780	4.200	4 150
12	73.200	347 000	75.300	38 300	18 000	8 990	6 810	3.390	3.030	4.350	5 020	2 890
13	77.500	327 000	73 600	48.200	13.400	8.120	6.660	3.910	3.140	3.360	4.430	3 040
14	87.900	311.000	70 200	48 400	17.400	11 800	6 700	3.910	3.090	2.820	4.650	2 880
15	85.300	319 000	68.700	41.700	17.500	8.650	7.700	3.860	2.990	3.270	5.360	2 430
16	69 800	294 000	65.200	42.900	17.700	6 350	6 650	4 840	3.110	3 420	3 360	2.550
17	71.000	256 000	58.100	32.100	16.600	7.680	6 620	3 350	3 030	4 260	4 440	2.720
18	61.400	224 000	62 800	40 000	14.800	7.260	7 360	4.020	2 320	3.920	3.100	2 490
19	57.200	193 000	65.000	39 800	13 100	7 090	7.940	4.190	2.580	3.630	3.610	2.730
20	56.900	170.000	73.500	41 200	9.400	6.320	6.280	5.260	2.370	3 560	3.620	3.100
21	58 700	160 000	70.100	46 700	12.300	9 440	5 650	4.780	3 410	3.490	2.750	4 430
22	65.700	152.000	67.900	43.100	11.700	12.400	7.270	4 500	3.250	3 480	2.780	4 350
23	108.000	141.000	57.100	35.200	9.620	12.100	3.110	4 430	3.340	3 430	3.510	4 430
24	158.000	133.000	53.600	34.800	9.580	7.060	4 120	4 260	3.370	3 180	5 370	4 560
25	159.000	129 000	53 200	30 700	8.450	8.870	4.200	4.860	3.140	3.140	9.020	15.800
26	164 000	168 000	57.300	26.300	9.290	8.650	2 790	3.740	2.890	6.240	7 860	49 800
27	126.000	163 000	51 600	28 500	9 320	7 320	3 200	3 200	3.600	12.900	7 690	40 500
28	157.000	151 000	48.500	27.700	7.920	6 090	3 690	3 930	3.760	14.700	5 820	15 000
29	162 000		44.500	26.900	7.890	7.200	3.370	3 860	4 320	12 300	3 400	23 000
30	229 000		41.700	20.700	8.790	5.050	4 570	4.050	5.040	5.500	4.020	22.400
31	288 000		49 400		10.900		4 320	4.580		4.560		11 800
Average	107.400	271.200	75 480	39.870	15.740	8.434	6.211	4.028	3.324	5 004	4 248	8 350
Lowest	56.700	129 000	41.700	20.700	7.890	5.050	2.790	3 050	2.320	2.820	2.340	2 430
Highest	288.000	405 000	148.000	50.500	25.900	12.400	10 900	5 260	5 040	14.700	9 020	49 800
Peak flow	333 00	416.00	182.00	62.60	43.80	21.30	25.80	12.40	25.00	25.90	27.60	90 70
Day of peak	31	8	1	19	22	23	11	21	7	27	2	26
Monthly total (million cu m)	287.60	656.20	202.20	103.30	42.15	21 86	16 63	10 79	8 62	13 40	11 01	22 36
Runoff (mm)	29	66	20	10	4	2	2	1	1	1	1	2
Rainfall (mm)	96	118	14	34	7	48	18	32	35	60	33	70

Statistics of monthly data for previous record (Jan 1883 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	126 800	123 200	104 900	75 620	53 740	37 250	23 590	21.950	23.380	38.680	72.220	101 500
	Low	18.570	12 290	9 426	8.975	4.391	3.302	2 079	1.912	0.688	3.144	7.472	10.210
	(year)	1976	1976	1976	1976	1976	1976	1921	1976	1976	1934	1921	1933
	High	325.300	342 000	359 500	188 800	171.700	171 600	72 290	79 330	123 900	179 800	334 000	333 900
	(year)	1915	1904	1947	1916	1932	1903	1968	1931	1927	1903	1894	1929
Runoff:	Avg.	34	30	28	20	14	10	6	6	6	10	19	27
	Low	5	3	3	2	1	1	1	1	0	1	2	3
	High	88	86	97	49	46	45	19	21	32	48	87	90
Rainfall:	Avg.	65	49	53	48	54	52	58	64	57	73	72	73
	Low	14	3	3	3	8	3	8	3	3	5	8	13
	High	137	127	142	104	137	137	130	147	157	188	188	185

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	44.270		66.630		66
Lowest yearly mean			20 410	1934	
Highest yearly mean			120 000	1951	
Lowest monthly mean	3.324	Sep	0 688	Sep 1976	
Highest monthly mean	271 200	Feb	359.500	Mar 1947	
Lowest daily mean	2 320	18 Sep	0.010	11 Oct 1976	
Highest daily mean	405 000	4 Feb	1059.000	18 Nov 1894	
Peak	416 000	8 Feb			
10% exceedance	132 900		161 600		82
50% exceedance	8 025		42 110		19
95% exceedance	2.863		9.065		32
Annual total (million cu m)	1396 00		2103.00		66
Annual runoff (mm)	140		211		66
Annual rainfall (mm)	565		718		79
[1941-70 rainfall average (mm)			724]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Ultrasonic station commissioned in 1974; multi-path operation from 1986. Full range. No peak flows pre-1974 when dmfs derived from Teddington weir complex (70m wide); significant structural improvements since 1883. Some underestimation of pre-1951 low flows. Baseflow sustained mainly from the Chalk and the Oolites. Runoff decreased by major PWS abstractions - naturalised flows available. Diverse topography, geology and land use which - together with the pattern of water utilisation - has undergone important historical changes.

039007 Blackwater at Swallowfield 1990

Measuring authority: NRA-T
First year: 1952
Grid reference: 41 (SU) 731 648
Level stn. (m OD): 42.30
Catchment area (sq km): 354.8
Max alt. (m OD): 225

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2 990	18 600	5 820	2 820	2.170	1.590	1 580	1 110	1 150	1.570	1 530	1.670
2	2 910	20 000	4 850	3 200	2 140	1 760	1 490	1 050	1 130	1 320	1.470	1.620
3	2 790	23.000	4 420	2.980	2.100	1.820	1.440	1 030	1 170	1 910	1 440	1.590
4	2 680	20 300	4 220	2 800	2 070	1 830	1 960	1 000	1 160	1 440	1.420	1.590
5	2 720	10 900	4 080	2 740	2 020	1.650	1.890	0 996	1.160	1 350	1 410	1 570
6	5 930	9 510	4.010	2.710	1 920	1.650	1.550	1 020	1 190	1.440	1.330	1 560
7	6.590	23 000	3.880	2 640	1 900	1.590	1 460	1 060	1.140	1 390	1 330	1.670
8	4 870	19 800	3.860	2.580	1 900	1.700	1.460	1.020	1.120	1 240	1.390	2.060
9	3.990	10 700	3.780	2 590	1 910	1.990	1 390	1.050	1.110	1 200	1 340	2.570
10	3 700	10 500	3 620	2 590	2 360	1.690	1.350	1.050	1.140	1.240	1 510	3.370
11	3 450	15 200	3 550	2 560	2 090	1 570	1.310	1.010	1 150	1.230	1 420	2.270
12	4 000	13.300	3.440	2 590	1 980	1.570	1.310	0 966	1 130	1.240	1 540	2.140
13	4.430	9 500	3 460	4 040	1 910	1.500	1 290	0 997	1 120	1.250	1.530	1.860
14	3 760	10 700	3.350	3.120	1 890	1.530	1 260	1 030	1 100	1.210	1 760	1 760
15	3.480	12 300	3.250	3 250	1 840	1 540	1 210	1 140	1 110	1 260	1 450	1.760
16	3.370	7 950	3 140	2 790	1 800	1 520	1 230	1 210	1 090	1 240	1 440	1 790
17	3 340	7 140	3.190	2 920	1 760	1 500	1 220	1 050	1 170	1 350	1 480	1 750
18	3 150	6 520	3 170	2 860	1 730	1 500	1 220	1.220	1 180	2.500	1 430	1 680
19	3 310	6 060	3.330	3 290	1 670	1 480	1 190	2.610	1.140	1 520	1.470	1.650
20	3 150	5 790	3.330	3 250	1 680	1 540	1.170	1 630	1 160	1 420	1.700	2 050
21	3.360	5 870	3.230	3 330	1.620	2 390	1.150	1.280	1.200	1.330	1 580	2 470
22	4 670	5 150	3.110	2.930	1.630	2 580	1 120	1 180	1.200	1 300	1 510	1 970
23	10 700	4.900	3 000	2 800	1.620	1.810	1.100	1 180	1.220	1 300	1.520	1 910
24	6 860	4.750	2 940	2 670	1.570	1 600	1.100	1.190	1.210	1.290	3 320	2 410
25	9 630	6 000	2.890	2 530	1.530	1.570	1.110	1 190	1.150	1 440	1.900	5 630
26	6 170	7 630	2 870	2 570	1.520	1.530	1.100	1.150	1.110	3.170	3 390	5 930
27	6 710	6 360	2.890	2 480	1.460	1 460	1.120	1.260	1.100	2 160	2 200	3.780
28	8 810	6 930	2 890	2 420	1.460	1 460	1.120	1.160	1.130	3.960	1 870	2 950
29	10 300		2.870	2 290	1 500	1 390	1 100	1 140	1.310	2.080	1 760	5 280
30	17 300		2 780	2 260	1 520	1 490	1 120	1.140	2 780	1.800	1 710	4 150
31	20 600		2.790		1 530		1.140	1 130		1 670		3 220
Average	5 797	11 010	3 484	2.820	1 800	1 660	1 299	1 169	1.208	1 607	1 672	2 506
Lowest	2 680	4 750	2.780	2.260	1 460	1 390	1 100	0.966	1 090	1.200	1 330	1.560
Highest	20 600	23 000	5.820	4.040	2 360	2 580	1 960	2 610	2.780	3.960	3.390	5 930
Peak flow	22 30	25 90	6.55	5 80	2 86	3.24	2 47	3 73	3.62	5 57	4 81	8 98
Day of peak	31	3	1	13	10	21	4	19	30	28	24	25
Monthly total (million cu m)	15.53	26 64	9 33	7.31	4.82	4.30	3 48	3 13	3.13	4.30	4 33	6.71
Runoff (mm)	44	75	26	21	14	12	10	9	9	12	12	19
Rainfall (mm)	113	141	7	34	8	42	11	27	28	60	36	69

Statistics of monthly data for previous record (Oct 1952 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	4 700	4 126	3.913	3.171	2.579	2 033	1.517	1 523	1 813	2.593	3.354	4 039
	Low	1.757	1 686	1.323	1 520	1 081	0 767	0 712	0 723	0 638	0 907	1 262	1.298
	(year)	1954	1965	1953	1976	1958	1953	1953	1953	1959	1959	1964	1953
	High	8 000	7 292	6 897	5 600	5 946	6.472	2.830	2 621	6 609	7.612	8.019	7 022
	(year)	1975	1966	1979	1966	1978	1971	1988	1977	1968	1960	1960	1960
Runoff	Avg.	35	28	30	23	19	15	11	11	13	20	25	30
	Low	13	12	10	11	8	6	5	5	5	7	9	10
	High	60	50	52	41	45	47	21	20	48	57	59	53
Rainfall	Avg.	67	44	55	46	56	52	54	59	64	72	71	74
	Low	14	5	3	3	8	5	18	17	3	6	18	15
	High	124	108	125	106	128	144	104	117	167	208	179	167

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	2 950		2 942		100
Lowest yearly mean			1 466	1953	
Highest yearly mean			3 777	1982	
Lowest monthly mean	1.169	Aug	0 638	Sep 1959	
Highest monthly mean	11 010	Feb	8 019	Nov 1960	
Lowest daily mean	0 966	12 Aug	0 464	18 Aug 1953	
Highest daily mean	23.000	3 Feb	39 200	16 Sep 1968	
Peak	25 900	3 Feb	41.000	16 Sep 1968	
10% exceedance	5 817		5 545		105
50% exceedance	1 745		2 173		80
95% exceedance	1.102		0.894		123
Annual total (million cu m)	93.03		92 85		100
Annual runoff (mm)	262		262		100
Annual rainfall (mm)	576		714		81
[1941-70 rainfall average (mm)			710]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge
- Augmentation from effluent returns.

Station and catchment description

Two Crump weirs (main 4.6m, side 2.7m wide) superseded original flume, plus side-spilling weir, in 1970. Minor bypassing of the side weir in flood conditions; overflows more frequent pre-1970. Some net import of water - sewage effluent augments flows. Exact delineation of the hydrological catchment is difficult. Chalk in the headwaters, clay, sands and alluvium in the valley. Substantial and expanding urban development in the catchment but large rural tracts remain; significant areas of heath and woodland

039020 Coln at Bibury 1990

Measuring authority: NRA-T
First year: 1963
Grid reference: 42 (SP) 122 062
Level stn. (m OD): 100.60
Catchment area (sq km): 106.7
Max alt. (m OD): 330

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.720	3.160	3.660	1.980	1.140	0.737	0.648	0.509	0.441	0.391	0.365	0.316
2	2.610	3.450	3.530	1.900	1.130	0.738	0.629	0.492	0.441	0.377	0.353	0.322
3	2.520	3.790	3.500	1.820	1.100	0.752	0.613	0.491	0.432	0.374	0.343	0.320
4	2.410	4.010	3.470	1.750	1.080	0.725	0.620	0.481	0.428	0.363	0.344	0.314
5	2.370	4.330	3.430	1.700	1.060	0.738	0.607	0.486	0.423	0.336	0.341	0.316
6	2.360	4.610	3.410	1.680	1.040	0.737	0.582	0.486	0.429	0.335	0.339	0.313
7	2.300	4.900	3.360	1.660	1.030	0.735	0.576	0.491	0.418	0.328	0.341	0.322
8	2.220	4.820	3.320	1.630	1.010	0.728	0.563	0.489	0.414	0.335	0.333	0.330
9	2.190	4.980	3.230	1.590	0.989	0.724	0.587	0.489	0.413	0.332	0.333	0.297
10	2.170	5.170	3.200	1.580	0.973	0.709	0.557	0.494	0.408	0.335	0.335	0.294
11	2.140	5.310	3.150	1.550	0.960	0.700	0.552	0.491	0.419	0.335	0.334	0.301
12	2.140	5.200	3.050	1.540	0.947	0.698	0.549	0.485	0.411	0.342	0.339	0.367
13	2.130	5.160	3.030	1.550	0.932	0.695	0.550	0.477	0.412	0.343	0.343	0.374
14	2.100	5.070	2.930	1.510	0.924	0.695	0.546	0.487	0.410	0.343	0.331	0.378
15	2.090	4.940	2.850	1.480	0.906	0.688	0.542	0.484	0.403	0.342	0.326	0.370
16	2.050	4.850	2.790	1.440	0.895	0.677	0.544	0.471	0.404	0.398	0.319	0.382
17	2.010	4.740	2.700	1.420	0.885	0.681	0.545	0.474	0.397	0.426	0.324	0.378
18	1.980	4.610	2.660	1.420	0.866	0.683	0.518	0.470	0.394	0.425	0.323	0.379
19	1.940	4.520	2.660	1.430	0.858	0.675	0.522	0.462	0.402	0.422	0.328	0.376
20	1.910	4.410	2.610	1.410	0.851	0.680	0.521	0.431	0.398	0.427	0.332	0.396
21	1.890	4.250	2.540	1.400	0.832	0.722	0.518	0.468	0.392	0.424	0.331	0.432
22	1.880	4.130	2.480	1.360	0.811	0.682	0.515	0.454	0.396	0.412	0.325	0.429
23	2.000	4.000	2.430	1.350	0.789	0.661	0.524	0.458	0.399	0.422	0.327	0.417
24	2.000	3.930	2.400	1.290	0.772	0.652	0.508	0.457	0.404	0.414	0.328	0.420
25	2.030	3.930	2.330	1.270	0.768	0.847	0.508	0.439	0.388	0.452	0.326	0.490
26	2.080	3.870	2.250	1.280	0.765	0.651	0.507	0.440	0.387	0.471	0.321	0.585
27	2.180	3.740	2.230	1.240	0.755	0.640	0.522	0.442	0.380	0.485	0.323	0.503
28	2.370	3.740	2.180	1.220	0.749	0.623	0.516	0.446	0.375	0.465	0.324	0.527
29	2.510		2.120	1.190	0.752	0.637	0.535	0.450	0.395	0.392	0.321	0.578
30	2.730		2.080	1.170	0.754	0.628	0.527	0.451	0.395	0.375	0.317	0.639
31	2.930		2.080		0.724		0.513	0.451		0.371		0.634
Average	2.225	4.414	2.827	1.494	0.905	0.691	0.550	0.471	0.407	0.387	0.332	0.403
Lowest	1.880	3.160	2.060	1.170	0.724	0.623	0.507	0.431	0.375	0.328	0.317	0.294
Highest	2.930	5.310	3.660	1.980	1.140	0.752	0.648	0.509	0.441	0.485	0.365	0.639
Peak flow	2.97	5.48	3.74	2.03	1.19	0.91	0.82	0.52	0.52	0.54	0.51	0.88
Day of peak	31	11	1	1	1	1	1	1	29	25	19	26
Monthly total (million cu m)	5.96	10.68	7.57	3.87	2.42	1.79	1.47	1.26	1.05	1.04	0.86	1.08
Runoff (mm)	56	100	71	36	23	17	14	12	10	10	8	10
Rainfall (mm)	115	138	15	37	5	57	24	27	41	80	34	87

Statistics of monthly data for previous record (Oct 1963 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	2.032	2.311	2.139	1.793	1.335	1.112	0.846	0.677	0.589	0.648	1.009	1.582
	Low	0.374	0.360	0.383	0.371	0.334	0.290	0.242	0.207	0.202	0.259	0.344	0.375
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1976	1973	1975
	High	3.196	3.695	3.385	3.415	2.599	2.290	1.397	1.085	0.908	1.299	2.714	3.015
	(year)	1982	1988	1977	1979	1983	1979	1985	1985	1968	1968	1967	1965
Runoff:	Avg	51	53	54	44	34	27	21	17	14	16	25	40
	Low	9	9	10	9	8	7	6	5	5	7	8	9
	High	80	87	85	83	65	56	35	27	22	33	66	76
Rainfall:	Avg.	74	58	69	52	69	60	58	68	67	67	75	87
	Low	13	8	19	5	23	9	15	23	17	8	30	24
	High	142	159	143	109	161	158	120	149	149	171	163	159

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	1.239		1.335		93
Lowest yearly mean			0.399	1976	
Highest yearly mean			1.771	1966	
Lowest monthly mean	0.332	Nov	0.202	Sep 1976	
Highest monthly mean	4.414	Feb	3.695	Feb 1988	
Lowest daily mean	0.294	10 Dec	0.190	23 Aug 1976	
Highest daily mean	5.310	11 Feb	4.870	22 Dec 1965	
Peak	5.480	11 Feb	5.000	22 Dec 1965	
10% exceedance	3.202		2.596		123
50% exceedance	0.630		1.073		59
95% exceedance	0.325		0.397		82
Annual total (million cu m)	39.07		42.13		93
Annual runoff (mm)	368		395		93
Annual rainfall (mm)	660		804		82
[1941-70 rainfall average (mm)			819]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Augmentation from effluent returns.

Station and catchment description

Crump weir (9.1m broad). Modular throughout the range. Some overspill onto floodplain before design capacity reached. Limited impact of artificial influences on river flows - net import (sewage effluent). Baseflow dominated flow regime. Pervious (Oolitic Limestone) catchment on the dip-slope of the Cotswolds; predominantly rural.

040003 Medway at Teston 1990

Measuring authority NRA-S
First year 1956
Grid reference 51 (TQ) 708 530
Level stn. (m OD): 7.00
Catchment area (sq km): 1256.1
Max alt. (m OD): 267

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4.178	167.600	13.520	4.624	3.617	2.154	2.260	1.333	1.430	2.475	2.401	4.251
2	3.848	156.100	9.660	5.683	3.513	2.186	1.786	1.273	1.491	0.652	2.155	2.185
3	2.737	152.700	8.186	7.240	3.278	2.643	1.757	1.291	1.329	1.357	1.279	2.899
4	3.382	144.000	7.485	4.648	2.693	2.286	2.006	1.390	1.407	1.331	1.549	2.709
5	3.365	81.570	8.683	4.108	2.718	1.854	1.724	1.362	1.350	1.361	3.299	2.527
6	6.655	34.710	6.954	4.116	3.143	1.842	1.566	1.206	1.375	1.195	2.045	2.426
7	29.920	114.300	6.384	3.385	2.055	2.441	1.593	1.210	1.336	1.073	2.110	2.324
8	10.560	111.500	6.212	3.306	2.397	1.909	1.765	1.235	1.367	1.178	0.989	1.846
9	7.907	68.460	4.500	3.250	2.561	1.886	1.644	1.220	1.386	1.053	0.974	3.124
10	5.846	50.780	5.274	2.987	3.187	1.769	1.719	1.280	1.237	1.084	0.935	5.484
11	5.500	81.600	5.120	3.293	3.236	1.809	1.721	1.323	1.319	1.022	1.138	5.041
12	4.541	76.870	5.392	3.696	2.358	2.063	1.586	1.403	1.326	1.023	1.325	3.446
13	5.305	41.490	4.745	5.257	2.664	1.996	1.476	1.232	1.387	1.051	2.071	3.193
14	4.697	46.140	4.750	6.753	3.280	1.934	1.531	1.274	1.339	1.014	2.358	2.984
15	4.525	74.110	3.524	7.217	1.867	1.863	1.523	1.261	1.436	1.255	2.074	2.470
16	4.608	38.200	4.013	4.981	2.279	2.114	1.439	1.259	1.418	1.450	1.351	2.398
17	3.855	24.740	4.008	4.502	2.358	1.971	1.408	1.351	1.656	1.253	1.140	2.251
18	3.685	20.730	3.788	4.328	1.701	1.924	1.465	1.480	1.364	1.214	1.426	2.176
19	3.935	17.340	3.706	4.691	1.556	2.000	1.382	2.274	1.313	2.210	1.705	2.230
20	5.615	14.880	3.522	6.044	1.651	1.754	1.339	2.235	1.377	1.278	1.762	2.400
21	5.148	13.000	3.567	9.971	1.677	3.261	1.374	1.734	1.184	1.187	1.615	3.705
22	11.160	10.890	3.981	6.273	1.603	5.332	1.293	1.502	1.301	1.156	1.521	4.769
23	27.710	9.812	3.556	4.803	1.541	2.162	1.275	1.398	1.597	1.115	1.693	3.468
24	25.720	9.298	3.690	4.366	1.601	1.830	1.329	1.389	1.270	1.100	8.247	3.036
25	47.940	14.380	3.932	3.841	1.624	1.615	1.342	1.300	1.146	1.662	14.160	13.700
26	25.950	46.150	5.676	3.711	1.598	1.687	1.248	1.383	1.112	5.199	20.990	24.570
27	12.160	26.900	3.190	3.641	1.704	1.715	1.253	1.288	1.030	11.720	24.210	19.660
28	12.410	17.240	3.604	3.761	1.801	1.741	1.461	1.285	1.118	23.390	13.050	11.160
29	31.180		3.428	3.778	1.778	1.647	1.316	1.275	1.996	8.014	5.555	18.340
30	101.400		3.511	3.724	1.921	1.798	1.343	1.419	3.266	4.288	4.478	11.330
31	147.800		3.334		1.891		1.312	1.342		2.968		8.477
Average	18.490	59.480	5.190	4.733	2.286	2.106	1.524	1.394	1.422	2.817	4.320	5.824
Lowest	2.737	9.298	3.190	2.987	1.541	1.615	1.248	1.206	1.030	0.652	0.935	1.846
Highest	147.800	167.600	13.520	9.971	3.617	5.332	2.260	2.274	3.266	23.390	24.210	24.570
Peak flow												
Day of peak												
Monthly total (million cu m)	49.53	143.90	13.90	12.27	6.12	5.46	4.08	3.73	3.69	7.54	11.20	15.60
Runoff (mm)	39	115	11	10	5	4	3	3	3	6	9	12
Rainfall (mm)	119	130	5	54	8	58	9	30	37	114	64	61

Statistics of monthly data for previous record (Oct 1956 to Dec 1989—incomplete or missing months total 1.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	22.880	18.820	14.910	11.020	6.902	4.730	2.994	3.336	4.790	8.523	15.210	18.780
	Low	3.334	5.290	3.385	2.328	1.751	1.141	1.118	0.578	1.068	1.401	2.339	3.670
	(year)	1989	1981	1976	1976	1976	1976	1976	1976	1959	1972	1978	1988
	High	48.240	49.160	31.600	23.550	20.820	21.690	7.553	9.968	30.090	53.220	66.830	37.330
	(year)	1988	1957	1975	1983	1978	1964	1980	1985	1968	1987	1960	1965
Runoff:	Avg	49	37	32	23	15	10	6	7	10	18	31	40
	Low	7	10	7	5	4	2	2	1	2	3	5	8
	High	103	95	67	49	44	45	16	21	62	113	138	80
Rainfall:	Avg	74	49	58	50	53	53	53	58	68	77	80	81
	Low	13	3	3	7	3	8	20	10	5	5	14	15
	High	187	123	113	108	112	127	103	122	183	198	169	168

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	8.784		11.040		80
Lowest yearly mean			6.079	1989	
Highest yearly mean			19.330	1960	
Lowest monthly mean	1.394	Aug	0.578	Aug 1976	
Highest monthly mean	59.480	Feb	66.830	Nov 1960	
Lowest daily mean	0.652	2 Oct	0.220	4 Sep 1973	
Highest daily mean	167.600	1 Feb	269.300	4 Nov 1960	
Peak			294.500	4 Nov 1960	
10% exceedance	15.800		24.870		64
50% exceedance	2.304		5.032		46
95% exceedance	1.147		1.483		77
Annual total (million cu m)	277.00		348.40		80
Annual runoff (mm)	221		277		80
Annual rainfall (mm)	689		754		91
[1941-70 rainfall average (mm)			755]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Crump profile weir plus sharp-crested weir superseded insensitive broad-crested weir. Flows greater than 27 cumecs measured at well calibrated river section 2km d/s (East Farleigh), updating of primary record incomplete. Responsive regime. Significant artificial disturbance; low flow augmentation from Bewl Water (via River Teise); > 20 yrs of naturalised flows available. Mixed geology; impervious formations constitute up to 50% of the catchment. Diverse land use with significant areas of woodland and orchard.

041016 Cuckmere at Cowbeech 1990

Measuring authority: NRA-S
First year: 1939
Grid reference: 51 (TQ) 611 150
Level stn. (m OD): 29.80
Catchment area (sq km): 18.7
Max alt. (m OD): 183

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	0 108	1.587	0.247	0 068	0 051	0 023	0.020	0.010	0.017	0 024	0 030	0 049
2	0 104	0.906	0 199	0 098	0.048	0 029	0 022	0 010	0 016	0 018	0 026	0 044
3	0 103	2 867	0.177	0 173	0.045	0 027	0 018	0 009	0.015	0.015	0.023	0.042
4	0 092	0 828	0.178	0.161	0 042	0 025	0.020	0.009	0 015	0 019	0 022	0 037
5	0 089	0.557	0 177	0.110	0 041	0 024	0 024	0 010	0 014	0 020	0.021	0 035
6	0 277	0.453	0.181	0.102	0 041	0 024	0.023	0 009	0 014	0 017	0 020	0 033
7	0 405	2.242	0 163	0 093	0 039	0.027	0.021	0 008	0 014	0 018	0 016	0 033
8	0 270	0.788	0 158	0 087	0.037	0 025	0 021	0.010	0.014	0 017	0 017	0 035
9	0 226	0 468	0.150	0 084	0 036	0 024	0 019	0.013	0 014	0 017	0 017	0 056
10	0 197	0.945	0 142	0 078	0 037	0 024	0 016	0 013	0 014	0 016	0.019	0.141
11	0 170	1.300	0 141	0 065	0.039	0 023	0 014	0.013	0.014	0 015	0.023	0 086
12	0 150	0 776	0.138	0 064	0 037	0 022	0.013	0.013	0 014	0 015	0 026	0 076
13	0 192	0 594	0.145	0 091	0 036	0 019	0 012	0 013	0 014	0 014	0 033	0 059
14	0 168	1.291	0 129	0 128	0.035	0 018	0 011	0 013	0 014	0 014	0.061	0 050
15	0.152	1.019	0.126	0 204	0.034	0.018	0 011	0 013	0 014	0 022	0.033	0.048
16	0.147	0.498	0.127	0 119	0 032	0 018	0.011	0.015	0 014	0 024	0 027	0 041
17	0.151	0.434	0.121	0 100	0.031	0 018	0 011	0 016	0 014	0 021	0.027	0 041
18	0.157	0 438	0.121	0 073	0.030	0 020	0 011	0 015	0.013	0 020	0.027	0.041
19	0 185	0.380	0.118	0 091	0 028	0 026	0.011	0 022	0 011	0 049	0 022	0 040
20	0 246	0.345	0.119	0 095	0 027	0.024	0.011	0.027	0 011	0 037	0 022	0 038
21	0 225	0.268	0 112	0.131	0 027	0 028	0 010	0 024	0.011	0 021	0 022	0 063
22	0 458	0.228	0 114	0.112	0 027	0 044	0 010	0.020	0 011	0 017	0 022	0 064
23	0.790	0.214	0.118	0.088	0.026	0 033	0 010	0 018	0 013	0 017	0.023	0 057
24	0 618	0.213	0 119	0 081	0.026	0 023	0 010	0.017	0.014	0 015	0.339	0 054
25	1 415	0.322	0.117	0.065	0 024	0 022	0 010	0 017	0 013	0 019	0.207	0.308
26	0 539	0.705	0.116	0 062	0.024	0 021	0 010	0 017	0 013	0 056	0.513	0 591
27	0 495	0 371	0.114	0 055	0 023	0 021	0 010	0 017	0 013	0 231	0 286	0 248
28	0.342	0 278	0.104	0 054	0.022	0 018	0 010	0 017	0.013	0 417	0.123	0 310
29	0 686		0 069	0 053	0 022	0 015	0 010	0 017	0 021	0 066	0 079	0 383
30	1.736		0.066	0 053	0.021	0 015	0 010	0 017	0 031	0 048	0.060	0.238
31	4 257		0 066		0.021		0 011	0 017		0 044		0.166
Average	0 489	0.761	0.135	0 095	0 032	0 023	0 014	0 015	0 014	0.044	0 073	0.113
Lowest	0 089	0 213	0 066	0 053	0 021	0 015	0 010	0 008	0 011	0 014	0 016	0 033
Highest	4.257	2.867	0 247	0 204	0.051	0 044	0 024	0 027	0 031	0 417	0.513	0 591
Peak flow	9.44	6.25	0 26	0 26	0 05	0.04	0 02	0.03	0.03	1.44	0.77	1 08
Day of peak	31	3	1	14	1	22	4	19	29	28	26	26
Monthly total (million cu m)	1 31	1.84	0 36	0 25	0 09	0 06	0 04	0 04	0 04	0 12	0.19	0 30
Runoff (mm)	70	98	19	13	5	3	2	2	2	6	10	16
Rainfall (mm)	130	117	6	60	5	63	15	41	35	130	78	65

Statistics of monthly data for previous record (Jan 1968 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	0 468	0 337	0.285	0.180	0.107	0 071	0 048	0 042	0 061	0.181	0.274	0.330
	Low	0 088	0 088	0.053	0.027	0.018	0 009	0 012	0 009	0 013	0 014	0.013	0.031
	(year)	1973	1981	1973	1976	1978	1976	1982	1976	1978	1978	1973	1971
	High	1.139	0.755	0.574	0.363	0.286	0 393	0 322	0.230	0.394	1.110	0 854	0.695
	(year)	1988	1974	1981	1983	1983	1971	1980	1985	1974	1987	1974	1984
Runoff:	Avg.	67	44	41	25	15	10	7	8	9	26	38	47
	Low	13	9	8	4	3	1	2	1	2	2	2	4
	High	163	98	82	50	41	54	46	33	55	159	118	100
Rainfall:	Avg.	94	59	72	50	56	61	56	63	79	93	97	91
	Low	25	23	22	3	8	12	16	7	9	5	19	21
	High	208	155	137	109	114	155	119	144	222	244	199	184

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	0.147		0.198		74
Lowest yearly mean			0 050	1973	
Highest yearly mean			0 282	1987	
Lowest monthly mean	0 014	Jul	0 009	Jun 1976	
Highest monthly mean	0.761	Feb	1.139	Jan 1988	
Lowest daily mean	0 008	7 Aug	0 003	21 Jun 1976	
Highest daily mean	4 257	31 Jan	6 658	14 Jan 1968	
Peak	9 444	31 Jan	18.790	7 Oct 1987	
10% exceedance	0 342		0 452		76
50% exceedance	0 033		0 083		40
95% exceedance	0 011		0 013		87
Annual total (million cu m)	4 63		6.25		74
Annual runoff (mm)	247		334		74
Annual rainfall (mm)	745		871		86
[1941-70 rainfall average (mm)			836]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.

Station and catchment description

Asymmetrical compound Crump profile weir (crests: 2.13m and 2.97m broad) with crest tapping - not currently used. Very limited head during droughts. Structure capacity exceeded in large floods. Early data (1939-67) is of poorer quality and relates to low flows only. Responsive to rainfall on impervious fraction of catchment. Flows diminished by surface and groundwater abstractions. A rural catchment developed on mixed geology (Hastings Beds predominate).

042010 Itchen at Highbridge+Allbrook 1990

Measuring authority: NRA-S
First year: 1958
Grid reference: 41 (SU) 467 213
Level stn. (m OD): 17.10
Catchment area (sq km): 360.0
Max alt. (m OD): 208

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4 775	8 556	9 942	7 146	5 183	4 294	3 976	2.737	2 966	3.028	3 065	2.982
2	4 723	9 151	9 591	7 389	5 127	4 330	3.810	2.624	2.883	2.843	3 018	3.011
3	4 517	11 230	9 398	7.376	5 146	4.435	3 693	2 555	2.969	3.041	3.005	2.956
4	4 452	10 710	9.230	7.316	5 080	4 310	3 919	2 495	3 001	2.893	2 975	2.909
5	4 495	10 460	9 042	7 108	5 077	4 280	3 850	2 576	3 021	2 890	2 836	2.904
6	5 009	10 400	8 932	6.982	5 062	4 307	3.733	2 615	3 055	2 858	2 935	2.915
7	4 907	12.500	8 834	6 900	5 042	4 287	3 706	2.632	2.938	2 813	2 870	2.936
8	4 897	11 480	8.857	6 771	4.980	4 289	3 625	2.651	2.899	2 893	2 865	3.103
9	5 024	10 630	8.776	6 640	5 067	4 222	3 534	2.655	2 811	2 811	2 903	3.207
10	5 134	11 130	8 619	6.654	5 644	4 203	3 390	2.654	2.694	2 746	2.990	3.271
11	5.000	12 300	8.507	6 509	5.351	4 312	3 351	2.725	2 648	2 748	2 978	3.167
12	5 253	12 390	8 372	6.560	5 222	4 367	3 226	2.729	2 631	2 746	3.075	2 986
13	5.308	11.740	8 399	6.908	5:180	4 331	3 125	2.739	2.606	2 721	2.960	2 968
14	5.097	12.240	8 270	6.710	5 130	4 217	2 893	2.789	2.557	2 655	2 951	2.986
15	5 019	12 350	7 968	6.560	5.050	4 090	2 954	2.994	2.532	2 589	3.084	2.974
16	4.862	11 640	7.693	6 469	4.996	4 026	2 916	3 042	2.536	2.576	2.895	2.970
17	4.768	11 480	7 888	6 356	4.882	3 976	2 945	2.984	2 639	2 669	2 896	3 017
18	4.723	11 320	7 952	6 244	4 845	4 141	2 900	3.127	2.652	2 706	2.902	2 964
19	4 913	11 330	7 851	6 266	4 838	4 143	2 768	3 664	2 561	2.762	2 832	2.902
20	4 858	11 290	7 804	6 234	4.748	4 102	2 839	3 472	2 561	2.747	2 940	3 095
21	4 978	11 140	7 671	6.114	4 682	4 324	2.830	3 290	2 599	2.720	2 966	3 166
22	5 213	10 740	7 690	5 927	4 586	4 356	2 782	3.235	2.655	2 728	2 866	3 098
23	5.733	10 670	7 719	5.768	4 474	4 068	2 765	3.110	2.662	2.651	2.932	3.068
24	5 481	10 480	7 697	5.602	4.461	4 028	2.752	3.031	2 730	2 766	3 482	3.215
25	5.677	10 740	7.559	5 512	4 437	4 012	2 726	2.982	2.668	2 896	3 416	3.947
26	5 306	10 930	7 410	5 479	4 406	3 900	2.692	2.894	2 664	3 413	3 452	4 099
27	5 352	10 390	7 367	5 419	4 395	3.867	2.752	2.964	2.623	3 612	3 291	4.066
28	5.540	10 230	7.220	5.398	4 333	3 855	2.768	2 895	2 608	4 506	3.122	3.738
29	5 803		7 234	5.329	4.342	3 746	2.773	2 818	2 873	4 000	2 972	3.777
30	7 295		7 315	5 233	4 395	3 861	2 864	2.899	3.309	3.500	3 022	3.616
31	8 035		7 274		4 327		2 914	2.989		3 100		3.546
Average	5 230	11 060	8.196	6.363	4 854	4 156	3 154	2.889	2.752	2 956	3.017	3.212
Lowest	4 452	8.556	7 220	5 233	4.327	3 746	2.692	2.495	2 532	2 576	2 832	2.902
Highest	8 035	12 500	9 942	7.389	5 644	4.435	3.976	3 664	3 309	4 506	3 482	4 099
Peak flow												
Day of peak												
Monthly total (million cu m)	14 01	26 75	21 95	16 49	13 00	10 77	8 45	7.74	7 13	7 92	7 82	8 60
Runoff (mm)	39	74	61	46	36	30	23	21	20	22	22	24
Rainfall (mm)	140	173	6	37	19	60	14	35	41	77	47	78

Statistics of monthly data for previous record (Oct 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	6 528	7 149	6.977	6 522	5.733	4 841	4 121	3.815	3 675	4 094	4 789	5 648
	Low	3 527	3 838	3 644	3 203	3 093	2 581	2 474	2.331	2.670	2 702	2 840	3.136
	(year)	1989	1989	1976	1976	1976	1976	1976	1976	1973	1959	1973	1973
	High	10 520	10 850	9.923	8 521	7 311	6 549	5.219	5.244	5 127	7.867	9 858	10 860
	(year)	1969	1969	1977	1969	1966	1979	1979	1979	1968	1960	1960	1960
Runoff:	Avg	49	48	52	47	43	35	31	28	26	30	34	42
	Low	26	26	27	23	23	19	18	17	19	20	20	23
	High	78	73	74	61	54	47	39	39	37	59	71	81
Rainfall (1959-1989)	Avg	89	56	73	54	60	56	55	64	74	86	89	96
	Low	12	5	3	2	10	10	17	13	5	6	27	19
	High	159	146	172	113	145	128	109	120	201	234	218	229

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	4 776		5 315		90
Lowest yearly mean			3 708	1973	
Highest yearly mean			6.594	1960	
Lowest monthly mean	2.752	Sep	2 331	Aug 1976	
Highest monthly mean	11 060	Feb	10 860	Dec 1960	
Lowest daily mean	2.495	4 Aug	2.167	24 Aug 1976	
Highest daily mean	12 500	7 Feb	12 800	29 Jan 1969	
Peak					
10% exceedance	8 658		7.717		112
50% exceedance	3 927		4.909		80
95% exceedance	2.636		3.035		87
Annual total (million cu m)	150 60		167 70		90
Annual runoff (mm)	418		466		90
Annual rainfall (mm)	727		852		85
[1941-70 rainfall average (mm)			873]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge
- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Crump profile weir 7.75m broad, installed in 1971 (superseded rated section with weedgrowth problems) plus thin-plate weir (Allbrook). All flows contained (rare bypassing resulted from wrong sluice settings). Flow augmentation from Gw during droughts. Gw catchment larger than topographical catchment. Artificial influences have minor, but increasing, impact on baseflow dominated regime; small net export of water. Very permeable catchment (90% Chalk). Land use is mainly arable with scattered urban settlements.

043005 Avon at Amesbury 1990

Measuring authority: NRA-W
First year: 1965
Grid reference: 41 (SU) 151 413
Level stn (m OD): 67 10
Catchment area (sq km): 323.7
Max alt. (m OD): 294

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	3.552	11.150	10.180	5.209	3.193	2.036	1.588	1.123	0.910	1.128	1.144	1.073
2	3.486	15.700	8.981	5.327	3.093	2.016	1.580	1.064	0.886	1.062	1.102	1.083
3	3.422	17.440	8.521	5.333	3.038	2.054	1.564	1.025	0.925	1.072	1.062	1.072
4	3.363	26.000	8.284	5.210	2.976	2.018	1.603	1.006	0.901	1.032	1.057	1.060
5	3.332	20.180	8.068	5.063	2.923	1.988	1.617	0.991	0.882	1.018	1.049	1.082
6	3.715	17.990	7.904	4.990	2.879	2.010	1.571	0.983	0.883	1.015	1.045	1.062
7	4.381	20.000	7.787	4.914	2.859	1.982	1.550	0.983	0.898	1.007	0.996	1.091
8	3.968	21.990	7.574	4.736	2.806	1.961	1.535	0.981	0.875	0.990	0.945	1.127
9	3.699	18.880	7.222	4.728	2.793	1.957	1.481	0.970	0.867	0.986	0.988	1.165
10	3.662	17.710	7.064	4.696	2.791	1.913	1.445	0.951	0.869	0.983	0.994	1.292
11	3.611	18.520	7.031	4.633	2.784	1.957	1.394	0.951	0.871	0.983	1.008	1.498
12	3.605	19.470	6.878	4.598	2.759	1.852	1.349	0.951	0.874	0.970	1.159	1.420
13	3.801	17.180	6.931	4.601	2.709	1.806	1.306	0.951	0.870	0.966	1.252	1.323
14	3.768	17.320	6.774	4.598	2.709	1.804	1.298	0.956	0.856	0.965	1.206	1.279
15	3.800	18.500	6.588	4.520	2.720	1.781	1.284	0.966	0.880	0.941	1.119	1.261
16	3.494	18.940	6.497	4.246	2.659	1.778	1.266	0.973	0.867	0.931	1.136	1.255
17	3.454	15.750	6.423	4.143	2.608	1.754	1.180	0.992	0.859	0.940	1.144	1.090
18	3.352	15.340	6.339	4.180	2.529	1.781	1.191	0.985	0.848	0.956	1.134	1.111
19	3.379	14.650	6.455	4.186	2.477	1.763	1.154	1.128	0.836	0.966	1.096	1.168
20	3.369	13.980	6.658	4.087	2.442	1.731	1.126	1.230	0.848	0.957	1.106	1.248
21	3.396	13.440	6.368	4.002	2.399	1.789	1.096	1.147	0.839	0.950	1.109	1.375
22	3.575	12.500	6.118	3.967	2.293	1.811	1.078	1.062	0.853	0.950	1.106	1.463
23	4.323	11.920	5.989	3.888	2.282	1.733	1.072	1.027	0.855	0.951	1.122	1.440
24	4.646	11.420	5.846	3.750	2.265	1.693	1.089	1.013	0.848	0.989	1.211	1.392
25	4.603	11.470	5.761	3.615	2.261	1.676	1.057	0.994	0.845	1.080	1.263	1.584
26	4.985	11.310	5.606	3.606	2.210	1.673	1.047	0.980	0.842	1.343	1.239	1.925
27	5.056	10.700	5.543	3.494	2.150	1.650	1.047	0.973	0.842	1.440	1.186	1.960
28	6.801	10.520	5.512	3.423	2.113	1.614	1.056	0.965	0.849	1.441	1.131	1.794
29	6.988		5.413	3.398	2.083	1.594	1.070	0.959	0.925	1.351	1.109	1.817
30	8.180		5.299	3.284	2.067	1.575	1.214	0.951	1.237	1.270	1.087	1.945
31	10.120		5.261		2.045		1.159	0.951		1.229		1.924
Average	4.345	16.000	6.802	4.347	2.578	1.825	1.292	1.006	0.881	1.060	1.110	1.366
Lowest	3.332	10.520	5.261	3.284	2.045	1.575	1.047	0.951	0.836	0.931	0.945	1.060
Highest	10.120	26.000	10.180	5.333	3.193	2.054	1.617	1.230	1.237	1.441	1.263	1.960
Peak flow	10.92	28.54	10.77	5.42	3.24	2.09	1.64	1.26	1.43	1.60	1.39	2.01
Day of peak	31	4	1	2	1	3	4	20	30	27	13	27
Monthly total (million cu m)	11.64	38.70	18.22	11.27	6.90	4.73	3.46	2.69	2.28	2.84	2.88	3.66
Runoff (mm)	36	120	56	35	21	15	11	8	7	9	9	11
Rainfall (mm)	114	147	15	31	8	45	27	39	41	65	37	73

Statistics of monthly data for previous record (Feb 1965 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	5.265	5.936	5.501	4.603	3.539	2.697	1.993	1.678	1.571	1.875	2.545	3.894
	Low	1.199	1.188	1.158	1.038	0.834	0.626	0.474	0.372	0.645	0.972	1.090	1.385
	(year)	1976	1976	1976	1976	1976	1976	1976	1976	1976	1989	1973	1975
	High	8.556	9.886	8.352	7.586	5.146	4.259	3.022	2.362	2.528	3.521	6.440	7.259
	(year)	1982	1977	1972	1979	1979	1979	1971	1979	1974	1966	1974	1982
Runoff	Avg.	44	45	46	37	29	22	16	14	13	16	20	32
	Low	10	9	10	8	7	5	4	3	5	8	9	11
	High	71	73	69	61	43	34	25	20	20	29	52	60
Rainfall:	Avg.	78	53	68	46	60	56	50	62	66	71	74	87
	Low	14	6	14	1	24	3	15	22	11	4	31	17
	High	134	134	150	100	121	143	113	152	179	161	185	160

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	3.465		3.412		102
Lowest yearly mean			1.430	1976	
Highest yearly mean			4.476	1977	
Lowest monthly mean	0.881	Sep	0.372	Aug 1976	
Highest monthly mean	16.000	Feb	9.686	Feb 1977	
Lowest daily mean	0.836	19 Sep	0.175	22 Aug 1976	
Highest daily mean	26.000	4 Feb	15.540	25 Feb 1977	
Peak	28.540	4 Feb	17.330	16 Mar 1982	
10% exceedance	7.802		6.512		120
50% exceedance	1.665		2.818		59
95% exceedance	0.874		1.144		76
Annual total (million cu m)	109.30		107.70		101
Annual runoff (mm)	338		333		101
Annual rainfall (mm)	642		771		83
(1941-70 rainfall average (mm)			768)		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.

Station and catchment description

Crump profile weir (crest 9.14m broad) flanked by broad-crested weirs. Small bypass channel approx. 2m u/s of weir - included in rating. Full range station. Bankfull is 1.37m. During summer flows are naturally augmented from groundwater draining from northern half of River Bourne catchment. Some groundwater pumping also takes place within the catchment. Predominantly permeable (Chalk) catchment with a small inlier of Upper Greensand and Gault. Land use - rural. Topographical and groundwater catchments do not coincide

045001 Exe at Thorverton 1990

Measuring authority: NRA-SW
First year: 1956
Grid reference: 21 (SS) 936 016
Level stn. (m OD) 25.90
Catchment area (sq km): 600.9
Max alt. (m OD) 519

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15 290	78 120	43 910	5 203	3.501	2.185	7 441	2 345	2.222	5 768	30.220	12.870
2	17 410	69.140	35.700	5.448	3 376	2.188	4 870	2.092	2.070	4 828	25 150	11.330
3	15.040	70 910	29 900	5 355	3.362	2 287	4.034	1 936	1 969	8.490	19 870	10 190
4	13.350	49.100	24 670	5 052	3 515	2 185	9 162	1 775	1 952	6 743	16 340	9 101
5	13 320	38 850	21 130	4.721	3 381	2.186	10 620	1 740	1 938	11 060	13 850	8.260
6	21 520	33 770	18 310	4.611	3 352	2 444	8.044	1 729	2 049	11.180	11.910	7.555
7	19 190	74 720	15 980	4 344	3 176	2 454	8.853	1.654	1 894	9 927	10 420	7 876
8	21.200	68 200	13 860	4 144	3 209	2.350	8.748	1 656	1 758	8 474	9 287	9 140
9	21.470	49.060	12.100	4 024	3 280	2 403	7 274	1 658	1 703	7.554	8 804	9 971
10	20 980	47 710	11 310	4 023	3.747	2 153	6.308	1 657	1.663	8.305	8 554	20 790
11	19 580	90 640	10 100	3.860	3 273	2 067	5.536	1 593	1 658	7.086	8.965	16.160
12	20 170	76.710	9 207	3.827	3.106	2 032	4.980	1.598	1.618	6.324	12.010	14.300
13	18.060	95.360	9.589	4 341	2.974	1.955	4 471	1 589	1.542	5.841	12.770	12.370
14	17.250	122 000	8 412	4.674	3.015	1 890	4 166	1.652	1.484	5 400	17.500	11 380
15	17 420	84 840	7.631	4 853	3 056	1.807	3 861	1.965	1 453	5.276	15 650	10 480
16	17.610	55 860	7.219	4.132	3.046	1 735	3 632	2.276	1 447	4 976	19 520	9 812
17	17.930	42 720	6 870	4 347	2 851	1 719	3 364	1 859	1 467	5.232	29 200	9 044
18	16.350	33 630	6 544	4.229	2.689	2 012	3 238	2 192	1.507	4.791	27.210	8 458
19	17 830	29 150	8 031	4 868	2.598	2.042	2.967	6.549	1 884	4.410	26.650	7.754
20	16.310	26 680	7.521	5 246	2 517	2 447	2.774	5.765	2.115	4.279	25.010	24.470
21	17 000	23 910	7.271	4.745	2.474	3.850	2 644	3 348	2 351	3.930	21.190	53 490
22	20.810	20 990	7.015	4 424	2.430	5 082	2.529	2 846	2.445	3.740	18.260	39.850
23	41.790	19.040	6 361	4.248	2.354	3 020	2 424	2 666	4 360	3.610	27.560	32 590
24	41 510	17 440	6 592	4.071	2.292	2.572	2 344	2 459	3 763	3.896	55 320	28 960
25	59.430	19.280	6.240	3.948	2 199	3.138	2.255	2.301	3.252	5.709	41 440	46.020
26	55 980	29 300	6 005	4 018	2.168	3 437	2 154	2 190	2.766	8.827	33.300	77.880
27	88 850	29 060	5 838	4.231	2 114	3 004	2 191	2.136	2 569	14 860	25 930	61 330
28	83 300	52 270	5.834	4 002	2.078	2 863	2 206	2.075	2.443	24.780	21 230	52.980
29	75.310		5.618	3 820	2.378	2.660	2.417	2 447	4 098	26 340	17 850	55 890
30	63.780		5 444	3 674	2.302	3 044	4 018	2 697	7.815	27 720	15 080	48.170
31	62 450		5.286		2 178		2.807	2.262		33 900		42 110
Average	31.210	51.730	12.110	4 416	2.838	2.507	4 591	2 345	2 375	9 460	20.870	24.860
Lowest	13.320	17 440	5 286	3 674	2 078	1.719	2.154	1.589	1.447	3 610	8 554	7.555
Highest	88.850	122.000	43 910	5.448	3.747	5 082	10 620	6 549	7 815	33 900	55.320	77 880
Peak flow	124 10	140 20	46.32	5.77	4.01	6 90	18.55	11.43	11.96	35.38	70.16	120 60
Day of peak	28	14	1	2	10	22	4	20	30	31	24	26
Monthly total (million cu m)	83 59	125 10	32 44	11 45	7.60	6 50	12 30	6.28	6 16	25.34	54 09	66 58
Runoff (mm)	139	208	54	19	13	11	20	10	10	42	90	111
Rainfall (mm)	194	239	32	49	17	108	62	72	83	139	113	162

Statistics of monthly data for previous record (May 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	29 100	25 450	19 190	13.300	8 634	5 578	4 642	6 420	9 113	16 970	22 180	29 920
	Low	5.438	6 450	6 378	4 341	2 595	1 988	1 154	0.695	1.699	1 560	5 297	12 460
	(year)	1963	1965	1962	1974	1976	1975	1976	1976	1972	1978	1978	1963
	High	57.190	47 220	49 630	28 800	29 380	15 870	19 770	20.550	35 830	59.830	46.170	68.440
	(year)	1984	1957	1981	1966	1983	1958	1968	1985	1974	1960	1986	1965
Runoff:	Avg	130	103	86	57	38	24	21	29	39	76	96	133
	Low	24	26	28	19	12	9	5	3	7	7	23	56
	High	255	190	221	124	131	68	88	92	155	267	199	305
Rainfall:	Avg	143	102	105	74	78	72	80	97	110	128	129	153
	Low	30	7	18	7	12	9	19	31	13	13	48	51
	High	297	196	222	163	175	160	174	181	254	300	239	321

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	13 870		15 840		88
Lowest yearly mean			9 698	1964	
Highest yearly mean			22 800	1960	
Lowest monthly mean	2.345	Aug	0 695	Aug 1976	
Highest monthly mean	51.730	Feb	68 440	Dec 1965	
Lowest daily mean	1.447	16 Sep	0.440	28 Aug 1976	
Highest daily mean	122 000	14 Feb	282 200	4 Dec 1960	
Peak	140 200	14 Feb	492.600	4 Dec 1960	
10% exceedance	40 000		37.920		105
50% exceedance	5.418		9 460		57
95% exceedance	1.709		1 883		91
Annual total (million cu m)	437 40		499 90		87
Annual runoff (mm)	728		832		87
Annual rainfall (mm)	1270		1271		100
(1941-70 rainfall average (mm)			1303)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns

Station and catchment description

Velocity-area station with cableway. Flat V Crump profile weir constructed in 1973 due to unstable bed condition. Minor culvert flow through mill u/s of station included in rating. Wimbleball Reservoir has significant effect upon low flows. Control point for Wimbleball Reservoir operational releases. Headwaters drain Exmoor. Geology predominantly Devonian sandstones and Carboniferous Culm Measures, with subordinate Permian sandstones in the east. Moorland, forestry and a range of agriculture.

047001 Tamar at Gunnislake 1990

Measuring authority: NRA-SW
First year: 1956
Grid reference 20 (SX) 426 725
Level stn. (m OD): 8.20
Catchment area (sq km): 916.9
Max alt. (m OD) 586

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	22.740	168 700	52 780	6 028	4.115	2 442	11.580	2.726	2.528	6 650	52.510	17.580
2	43 840	118.900	39.730	6.261	3.917	2 359	6 083	2.395	2.281	4.113	62 820	15.970
3	32.600	114.800	32.590	6 329	3 771	2 598	4.532	2.155	2 130	9 305	41 900	14.470
4	26.740	69 830	27 610	6.169	3.654	2 897	10 450	2 294	2.100	6 821	30 150	12 990
5	27.230	52.570	24 040	5.779	3.533	2 813	10 150	2 251	2 089	5.758	23 950	11 660
6	80 950	76.250	21.260	5.542	3.459	3.307	7 012	2.206	2 104	6 567	19 520	10 690
7	47.700	186.800	19 120	5.291	3.366	3.400	20 350	2 170	1.998	7.641	16.690	11 660
8	43.940	101.100	17.090	5 011	3.322	3 151	12 910	2.092	1 905	5 855	17 050	18.060
9	36.940	70 910	15 040	4.884	3 432	2 991	8 888	2 127	1 841	4.803	14 120	25 800
10	33.670	83.470	13.750	4 920	4 245	2 605	6.921	2 194	1 804	4 779	13 150	18.570
11	28.100	169.500	12 720	4 867	3 721	2.340	6 005	2.160	2 063	5 721	12 790	15.320
12	32 860	96 540	11.820	4.828	3.357	2 271	5 415	2 086	2.059	4 676	17.950	14 620
13	28.680	141 000	12 060	6 094	3.184	2 175	4 912	2 017	2 059	4.154	23 070	12.650
14	26.720	188.700	10.720	5 774	3.175	2 099	4 491	2 050	2.016	3 850	31.040	11 640
15	26 430	142.800	9 808	7 549	3 486	2 057	4.169	2 267	1 957	3 985	21 760	11 030
16	26.490	77.160	9.290	5 833	3 452	1 884	3 937	2.515	1 931	4.156	25 930	10 680
17	23.260	62 900	8 810	5.530	3.119	1.867	3 542	2.381	1.978	8 045	24 350	10 150
18	20.280	49 560	8 369	7.236	2.900	2 400	3 330	2 240	2.158	6 873	20 050	9.758
19	25.930	44.020	10.800	6 599	2 811	2.688	3 082	4.623	2.394	5.102	18 760	9 070
20	23.400	48 150	11 210	8.803	2.729	4 109	2 898	6 094	2 572	4 613	40 370	15 400
21	37.120	43 880	9 467	6.447	2.647	5 481	2 849	3.299	2 546	4 247	31 530	83 940
22	45 690	36.220	9 150	5.786	2 593	10 310	2.731	2 609	2.525	3 957	25.460	47 980
23	94.640	31.840	8 180	5 406	2.484	5.259	2.569	2 398	3 352	3 893	42 540	32.100
24	72.410	28 370	7 987	5 050	2 408	4 241	2 444	2.185	3 652	4 436	133 200	31 420
25	96.290	36 100	7.514	4 813	2.330	3 960	2.346	2 070	2.859	29.850	72.510	92 560
26	93.930	48 130	7 066	4 731	2 258	3 840	2 264	2 039	2 495	35 950	45 410	95.170
27	161.800	50.150	6.799	5.247	2 182	3 535	2 322	1.996	2.257	34.500	34.290	70 980
28	152.400	96 840	6 840	4 818	2.132	3.250	2.295	1.933	2 140	46.760	27 870	58.340
29	172.600		6 628	4.512	2.380	3 384	2 766	2.940	3 026	49 720	23 520	73.510
30	123.300		6 328	4 324	3 476	4.516	5 329	3.784	6.978	49.600	19 890	54 400
31	120 700		6 128		2.842		3 758	2.761		48 650		51.470
Average	59 010	86.970	14 540	5 682	3 112	3 341	5.559	2 550	2 460	13 710	32 800	31.280
Lowest	20.280	28.370	6.128	4.324	2.132	1 867	2 264	1.933	1.804	3 850	12 790	9 070
Highest	172.600	188.700	52 780	8.803	4.245	10 310	20 350	6 094	6.978	49.720	133.200	95.170
Peak flow	253.60	255 60	63 80	11.18	4.51	15 31	27 18	7 45	12 31	70 65	154.10	139 10
Day of peak	28	2	1	20	10	22	7	20	30	30	24	25
Monthly total (million cu m)	158.10	210 40	38 94	14 73	8.34	8 66	14.89	6 83	6 38	36 72	85 03	83.78
Runoff (mm)	172	229	42	16	9	9	16	7	7	40	93	91
Rainfall (mm)	225	251	30	50	33	124	69	68	71	158	117	126

Statistics of monthly data for previous record (Jul 1956 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	45.060	36.060	26.230	16.740	11 390	6 777	6 021	8.548	11.910	22 830	34 610	44 980
	Low	8 475	9 162	11 250	6 422	3.487	1.994	1 182	0 758	1.117	1 540	4 212	18 340
	(year)	1984	1965	1961	1974	1976	1976	1976	1976	1959	1978	1978	1963
	High	89 410	84 270	65.520	35 200	32 370	20 630	28.720	42.100	59 840	65 080	78 760	91.690
	(year)	1974	1974	1981	1985	1983	1972	1968	1958	1974	1981	1959	1959
Runoff:	Avg	132	96	77	47	33	19	18	25	34	67	98	131
	Low	25	24	33	18	10	6	3	2	3	5	12	54
	High	261	222	191	100	95	58	84	123	169	190	223	268
Rainfall:	Avg.	143	97	101	68	73	70	82	94	104	125	136	146
	Low	23	3	14	7	18	11	13	18	10	12	57	41
	High	301	206	219	151	149	167	160	179	251	258	274	266

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	21 330		22 550		95
Lowest yearly mean			12 520	1964	
Highest yearly mean			34 890	1974	
Lowest monthly mean	2.460	Sep	0.758	Aug 1976	
Highest monthly mean	86.970	Feb	91.690	Dec 1959	
Lowest daily mean	1.804	10 Sep	0 580	23 Aug 1976	
Highest daily mean	188.700	14 Feb	482 300	27 Dec 1979	
Peak	255.600	2 Feb	714 600	28 Dec 1979	
10% exceedance	55.450		55 370		100
50% exceedance	6 138		12 180		50
95% exceedance	2 074		1 833		113
Annual total (million cu m)	672.70		711.70		95
Annual runoff (mm)	734		776		95
Annual rainfall (mm)	1322		1239		107
[1941-70 rainfall average (mm)			1240]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station, wide, shallow channel. Cableway span 46.9m. Low flows measured at another, narrower, site. High flow gauging difficult owing to standing waves. Roadford Reservoir from 1989 may have significant affect at low flows. Rural catchment of moderate relief, draining very disturbed lower Carboniferous slates, shales, grits and volcanics. Significant alluvial flats in middle reaches. Devonian slates low down. Fairly responsive. A range of agriculture, grazing and forestry as land use.

050001 Taw at Umberleigh 1990

Measuring authority: NRA-SW
First year: 1958
Grid reference: 21 (SS) 608 237
Level stn (m OD): 14.10
Catchment area (sq km): 826.2
Max alt. (m OD): 604

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15.360	108.700	50.440	4.341	2.824	1.359	5.760	1.597	1.448	6.233	49.980	13.840
2	21.710	92.110	37.090	4.584	2.681	1.323	3.559	1.394	1.293	5.321	37.470	12.040
3	18.180	95.760	29.000	4.935	2.586	1.466	2.356	1.206	1.249	9.927	27.660	10.830
4	15.300	60.590	23.630	5.000	2.501	1.560	4.849	1.181	1.212	8.365	21.220	9.936
5	15.200	44.530	19.920	4.202	2.509	1.587	6.642	1.129	1.159	10.800	17.040	8.711
6	31.860	36.700	17.280	3.911	2.279	1.736	5.541	1.144	1.238	11.650	13.880	7.806
7	26.640	112.700	15.220	3.617	2.317	1.736	7.223	1.031	1.106	11.190	12.140	8.451
8	26.890	88.260	13.190	3.350	2.279	1.633	7.408	1.042	1.059	9.274	10.750	13.330
9	26.300	59.120	11.270	3.253	2.358	1.730	6.467	1.039	1.018	7.965	10.410	17.230
10	25.860	61.760	10.250	3.248	2.903	1.458	5.582	1.068	0.978	8.230	10.260	31.160
11	22.620	131.300	9.296	3.165	2.433	1.288	4.816	1.076	0.909	6.903	11.930	22.150
12	24.020	95.520	8.523	3.195	2.212	1.261	4.216	1.041	0.889	6.179	21.950	20.720
13	21.570	123.500	8.776	4.728	2.097	1.242	3.657	1.001	0.914	5.681	23.260	16.340
14	20.100	166.600	7.577	4.201	2.071	1.196	3.214	1.083	0.868	5.152	27.310	14.090
15	20.590	118.100	6.737	5.192	2.194	1.149	2.894	1.192	0.839	4.979	22.870	12.340
16	21.110	69.660	6.316	3.957	2.144	1.099	2.743	1.183	0.833	4.536	24.310	11.110
17	20.670	54.700	5.962	3.980	1.906	1.067	2.452	1.095	0.815	4.475	28.120	10.110
18	19.190	40.940	5.643	4.169	1.767	1.214	2.231	1.493	0.827	4.382	26.330	9.332
19	22.790	34.000	8.617	5.557	1.698	1.516	2.160	5.890	1.203	4.232	24.650	8.303
20	21.130	31.800	8.243	6.534	1.669	1.761	2.017	4.072	1.099	3.835	29.850	32.830
21	22.250	28.680	7.383	4.861	1.615	3.332	1.894	2.155	1.334	3.376	29.000	91.750
22	29.500	24.520	7.661	4.346	1.567	4.347	1.773	1.651	1.607	3.134	23.320	65.290
23	71.840	22.380	6.247	4.010	1.490	2.467	1.752	1.603	3.124	3.049	27.770	47.390
24	59.710	20.270	6.100	3.662	1.421	1.964	1.961	1.485	2.670	3.356	88.350	40.040
25	83.130	24.410	5.643	3.461	1.347	2.093	1.839	1.364	2.408	9.929	63.090	71.320
26	77.730	38.040	5.244	3.628	1.303	2.025	1.727	1.325	2.063	14.770	45.130	87.580
27	114.500	42.840	5.098	3.847	1.283	1.759	1.620	1.271	1.872	27.750	32.340	70.480
28	119.800	76.560	5.128	3.323	1.250	1.623	1.552	1.232	1.763	42.610	24.790	62.440
29	104.300		4.816	3.128	1.387	1.522	1.500	1.620	3.069	45.060	20.120	73.930
30	88.800		4.588	2.980	1.832	2.022	2.609	1.771	8.217	48.100	16.520	59.160
31	88.140		4.418		1.518		2.026	1.517		62.960		54.180
Average	41.830	68.000	11.780	4.079	1.982	1.718	3.421	1.547	1.636	13.010	27.390	32.720
Lowest	15.200	20.270	4.418	2.980	1.250	1.067	1.500	1.001	0.815	3.049	10.260	7.806
Highest	119.800	166.600	50.440	6.534	2.903	4.347	7.408	5.890	8.217	62.960	88.350	91.750
Peak flow	187.30	203.10	58.24	9.38	3.23	5.48	7.95	8.62	11.59	68.14	111.60	115.70
Day of peak	28	15	1	20	10	22	8	19	30	31	24	26
Monthly total (million cu m)	112.00	164.50	31.56	10.57	5.31	4.45	9.16	4.14	4.24	34.85	71.00	87.63
Runoff (mm)	136	199	38	13	6	5	11	5	5	42	86	106
Rainfall (mm)	180	225	30	51	23	104	56	72	82	145	100	146

Statistics of monthly data for previous record (Oct 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	35.600	28.340	21.260	14.340	9.278	5.151	4.718	5.860	7.831	19.500	28.610	36.390
	Low	6.657	3.245	7.449	3.888	2.073	1.329	0.793	0.423	0.859	1.043	3.654	13.200
	(year)	1963	1959	1984	1974	1976	1984	1984	1976	1959	1978	1978	1963
	High	62.100	54.760	52.140	32.800	37.000	16.630	23.390	19.130	47.670	77.360	58.500	73.670
	(year)	1984	1970	1981	1966	1983	1972	1968	1985	1974	1960	1963	1965
Runoff:	Avg	115	84	69	45	30	16	15	19	25	63	90	118
	Low	22	10	24	12	7	4	3	1	3	3	11	43
	High	201	160	169	103	120	52	76	62	150	251	184	239
Rainfall:	Avg	130	87	93	70	71	67	72	88	93	118	126	138
	Low	28	3	18	8	17	10	23	24	14	14	53	41
	High	242	173	183	145	146	164	156	160	247	278	239	271

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre 1990
Mean flow (m^3s^{-1})	17.110		18.040		95
Lowest yearly mean			11.310	1964	
Highest yearly mean			27.590	1960	
Lowest monthly mean	1.547	Aug	0.423	Aug 1976	
Highest monthly mean	68.000	Feb	77.360	Oct 1960	
Lowest daily mean	0.815	17 Sep	0.200	28 Aug 1978	
Highest daily mean	166.600	14 Feb	363.800	4 Dec 1960	
Peak	203.100	15 Feb	644.900	4 Dec 1960	
10% exceedance	55.020		47.150		117
50% exceedance	4.991		9.198		54
95% exceedance	1.075		1.186		91
Annual total (million cu m)	539.60		569.30		95
Annual runoff (mm)	653		689		95
Annual rainfall (mm)	1214		1153		105
[1941-70 rainfall average (mm)			1193]		

Factors affecting flow regime

- Abstraction for public water supplies.

Station and catchment description

Velocity-area station, main channel 34m wide, cableway span 54.9m. Rock step downstream forms control. Bypassing begins at about 3.7m on right bank, but a good rating accommodates this. Significant modification to flows owing to PWS abstraction. Some naturalised flow data available. Large rural catchment - drains Dartmoor (granite) in south and Devonian shales and sandstones of Exmoor in north. Central area underlain mainly by Culm shales and sandstones (Carboniferous). Agriculture – mostly rough pasture.

052005 Tone at Bishops Hull 1990

Measuring authority: NRA-W
First year: 1961
Grid reference: 31 (ST) 206 250
Level stn. (m OD): 16.20
Catchment area (sq km): 202.0
Max alt. (m OD): 409

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4 257	40 080	6.825	1.646	1 075	0 648	0.976	0 465	0 506	0 643	0 975	1.246
2	5.383	19.490	5.771	2.013	1.026	0 630	0.608	0.422	0 487	0.530	0 829	1.187
3	4.173	36 400	5.272	1.792	1 025	0.763	0 549	0.381	0 483	0.577	0.757	1.130
4	3.429	12.560	4 827	1.687	0 965	0 605	1.059	0 376	0 464	0.518	0 710	1.056
5	3.354	9.655	4 453	1.580	0 953	0 682	0 815	0 367	0 494	0 546	0.684	1.007
6	5 836	9.878	4.133	1.537	0.952	0.748	0.709	0 355	0 475	0 539	0 654	0 980
7	4 440	30.260	3.787	1.463	0 925	0.737	0 731	0.356	0 445	0 515	0 626	1 100
8	4 144	11.170	3.554	1.433	0.946	0.728	0 682	0 365	0 431	0 485	0 640	1 525
9	3.805	9.004	3.249	1.452	1.017	0.675	0 616	0 363	0.435	0 477	0.715	1 750
10	3 618	10 070	2 944	1 475	1 159	0 636	0 612	0 490	0.438	0 493	0.736	2 539
11	3 302	39 260	2 803	1 431	0 990	0.663	0.555	0 464	0 444	0 495	0 837	1.748
12	3.506	16.780	2.663	1.469	0 962	0 652	0 541	0 456	0 455	0.467	1.283	1.505
13	3.334	17.600	2.714	1.660	0.941	0 611	0 521	0 454	0 460	0 480	1.211	1.359
14	3 116	30 610	2.454	1.682	0.972	0.590	0.416	0 483	0 443	0 466	1.227	1.297
15	2.886	15.100	2.346	1.555	0 982	0.584	0 462	0 505	0.440	0 500	0.937	1 266
16	2.747	10 690	2 294	1.487	0.915	0.576	0.430	0.484	0 425	0 509	0 908	1.217
17	2 545	9 084	2 222	1 567	0 830	0 576	0.456	0.445	0 420	0 541	1 060	1 159
18	2.415	7.569	2 158	1.500	0 806	0 746	0 422	0 446	0 439	0 529	1.011	1.152
19	2.588	6.684	2.653	1.541	0.792	0 628	0 422	1.092	0 467	0 503	0 968	1 092
20	2.428	5.846	2.335	1.565	0.779	1.007	0 412	0 669	0 470	0.465	1 048	1.460
21	2.644	5 305	2 218	1 454	0 774	1.145	0 460	0.509	0.521	0.483	0 983	2 267
22	3.220	4 645	2 089	1.430	0.782	0.827	0 424	0.524	0 563	0 434	0.931	1 716
23	9 132	4.356	2 003	1 378	0 767	0 650	0.430	0.505	0.589	0.465	1 407	1 644
24	6 140	4.135	1 961	1 317	0 695	0 622	0 422	0 419	0 547	0 550	4 231	1 932
25	9.303	6 002	1.879	1.295	0 682	0.614	0.415	0 463	0.509	0.934	3 365	5.305
26	8.795	7.154	1.815	1.316	0.626	0.600	0.422	0 460	0 483	1.037	2.396	8.150
27	38 300	7 158	1 765	1.264	0 611	0 587	0 434	0 466	0 470	1 068	1 866	6 009
28	15.160	10 020	1.719	1.180	0.584	0.552	0.422	0.446	0 480	1.290	1 666	5.257
29	15.470		1.676	1.142	0.650	0 539	0.490	0.782	0 975	0 971	1 505	6 693
30	14.420		1.684	1 117	0 677	0 765	1 192	0 582	0 985	1.033	1 362	4 997
31	13.700		1.651		0 641		0 612	0 521		1.231		4 334
Average	6 632	14 160	2 900	1 480	0 854	0.679	0 571	0.488	0.508	0.638	1.251	2 422
Lowest	2.415	4.135	1.651	1.117	0 584	0.539	0 412	0 355	0 420	0 434	0 626	0 980
Highest	38.300	40.080	6 825	2.013	1.159	1 145	1.192	1 092	0 985	1 290	4 231	8 150
Peak flow	83.29	76 67	7.66	2 71	1 70	1.56	1 90	1 48	1 42	1 62	5 11	12.69
Day of peak	27	1	1	20	3	20	30	19	29	28	24	26
Monthly total (million cu m)	17.76	34 26	7.77	3 84	2.29	1 76	1 53	1.31	1.32	1 71	3 24	6 49
Runoff (mm)	88	170	38	19	11	9	8	6	7	8	16	32
Rainfall (mm)	154	194	21	37	14	77	43	45	52	88	78	105

Statistics of monthly data for previous record (Feb 1961 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	6 003	5.985	4 408	3 062	2 112	1 391	1.181	0 948	1.212	2 047	3.298	5 115
	Low	1 246	1 746	1 552	1 176	0 734	0 456	0 326	0 266	0 501	0 580	0 651	1 821
	(year)	1976	1965	1962	1976	1976	1976	1976	1976	1964	1978	1978	1975
	High	14 560	14.000	9.259	6.655	6.562	2.770	5 628	1.685	4 892	9.873	7 611	11 280
	(year)	1984	1978	1981	1966	1983	1972	1968	1965	1974	1976	1982	1965
Runoff:	Avg.	80	72	58	39	28	18	16	13	16	27	42	68
	Low	17	21	21	15	10	6	4	4	6	8	8	24
	High	193	168	123	85	87	36	75	22	63	131	98	150
Rainfall:	Avg.	112	82	86	62	66	58	59	70	80	94	96	113
	Low	25	6	5	6	14	8	16	19	8	8	31	34
	High	250	170	170	150	137	147	144	126	202	249	192	205

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	2 640		3 050		87
Lowest yearly mean			1.600	1964	
Highest yearly mean			4.084	1974	
Lowest monthly mean	0 488	Aug	0 266	Aug 1976	
Highest monthly mean	14 160	Feb	14 560	Jan 1984	
Lowest daily mean	0.355	6 Aug	0.179	22 Aug 1976	
Highest daily mean	40.080	1 Feb	84.200	23 Feb 1978	
Peak	83 290	27 Jan	112.700	11 Jul 1968	
10% exceedance	5.877		6.583		89
50% exceedance	0.984		1.791		55
95% exceedance	0.427		0.632		68
Annual total (million cu m)	83 25		96 25		86
Annual runoff (mm)	412		476		86
Annual rainfall (mm)	908		978		93
[1941-70 rainfall average (mm)			995]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.

Station and catchment description

Crump profile weir (breadth 12.2m) with crest tapping (not operational). Full range station. Pre-March 1968: velocity-area station; flows inaccurate below 1.42 cumecs. Clatworthy and smaller Luxhay Reservoir in headwaters. Compensation flow maintains low flows. Reservoirs not large enough to influence fairly rapid response to rainfall. Minor surface water abstractions for PWS. Catchment geology - predominantly sandstones and marls. Land use - rural.

053018 Avon at Bathford 1990

Measuring authority: NRA-W
First year 1969
Grid reference 31 (ST) 786 671
Level stn (m OD): 18 00
Catchment area (sq km): 1552.0
Max alt. (m OD): 305

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	22.330	102 400	32 490	10 910	7 172	4 478	5.128	3 589	2.858	4 284	5 889	5 586
2	22.190	122 500	25.170	11 940	6 299	4.318	4.386	2.969	2 905	3 496	5 293	5.176
3	20 450	167.400	22 650	12.160	6.416	4 603	4.196	2.770	2.686	3 680	4 869	5.123
4	18 810	155 700	21 260	11 390	6 397	4.970	5 100	2.678	2.687	3.227	4 585	5 046
5	18.590	68.290	20.140	10.710	6 089	4 850	5.358	2.623	2.711	2 963	4 616	4 704
6	29.700	52.900	19 120	10.190	5.841	5.168	4 669	2.511	2.705	3 100	4 260	4 649
7	34 220	111 400	18 070	10 250	5 658	5 039	3.897	2.563	2.590	2 984	4 423	5 002
8	27.860	147 500	17 320	9 933	5 709	5 024	3.980	2 621	2 458	2 768	4 340	5 673
9	24 600	77 090	16 180	10 130	5 694	4 990	3.754	2 635	2 354	2.646	4 396	6.225
10	23.080	61 720	15.660	9 874	5 702	5 141	3.453	2.587	2 481	2 694	4 633	10.550
11	21.350	85 970	15 220	9 745	5 636	5 465	3 382	2.477	2 370	2 722	5 051	9 410
12	21 480	81 570	14 880	9 667	5 559	5.246	3.179	2.518	2.525	2.574	7.799	7 756
13	24 630	63 940	15 100	10 180	5.443	4 775	3 105	2 528	2 662	2 303	6.791	6 760
14	21.740	75.840	14 140	9 913	5 676	4 439	2 915	2 758	2 711	2.438	7 566	6 214
15	20 530	79 670	13 680	10 020	5 890	4 287	2.918	3.352	2.554	2.500	6 179	6 040
16	19.080	52 200	13 830	9 331	5 519	4.268	2.726	3.603	2.709	2.723	5.551	5 795
17	17 620	43 800	13 350	9 796	5 380	4 161	2 984	3 358	2 883	2.551	6 537	5.675
18	16.120	39.270	13 400	9 828	5 109	4 982	2 965	3 168	3 048	2.751	6.792	5 663
19	16 750	35.170	16 090	9.991	5 098	5 525	2 860	6 725	3 001	2 645	6.382	5 463
20	16 140	31.590	16 320	10 070	4 848	5 401	2 915	5 833	2 868	2.665	8 771	6 339
21	16.230	29.960	14 490	9 281	5 114	5 928	2 610	4.246	2 333	2.563	7.666	13.490
22	20 860	27 070	13 630	9 038	4 761	5 863	2 647	3 762	2 389	2 549	6.321	10.240
23	49.120	25.250	12 840	8 724	4 459	4 951	2 486	3 547	3 086	2.541	6 380	8.149
24	41.860	23 930	12 570	8 249	4 649	4 657	2 409	3 294	2 394	3 981	9.507	9 057
25	56.240	25.040	12 120	8 167	4 552	4 352	2.520	3.212	2 197	5.801	8 397	16 730
26	53 000	29.100	12.050	7 942	4 415	4 238	2.706	3 128	2 009	9.372	7 374	28 380
27	61 490	28 900	11 490	7 821	4 306	4 234	2.988	2 985	1.592	8.190	6 416	23.650
28	90 760	34 070	11 340	7 549	4 394	4.085	2.831	2 941	1 746	10 160	5 999	19 890
29	65.950		11.250	7 458	4 379	3.849	2.833	2 933	3.885	7 516	6 052	28 270
30	73.570		11.230	7.392	4.348	4.123	5 524	3.135	5.568	7 602	5 849	25 870
31	93 630		10 870		4 431		4.270	2 885		7 005		23.210
Average	34.190	67 120	15 740	9 588	5 321	4 780	3 474	3 224	2 699	4 032	6.156	10.640
Lowest	16 120	23 930	10 870	7 392	4 306	3 849	2 409	2 477	1 592	2 303	4 260	4 649
Highest	93.630	167.400	32 490	12 160	7 172	5.928	5.524	6.725	5.568	10 160	9 507	28.380
Peak flow	101.90	209 80	38 03	13.26	7 36	6.50	7.41	7.83	6.13	12.52	11 65	37 69
Day of peak	28	3	1	2	1	22	30	19	30	28	24	26
Monthly total (million cu m)	91.58	162 40	42.16	24 85	14 25	12 39	9.30	8.63	6.99	10.80	15 96	28 49
Runoff (mm)	59	105	27	16	9	8	6	6	5	7	10	18
Rainfall (mm)	112	134	17	37	7	70	38	44	42	80	42	82

Statistics of monthly data for previous record (Dec 1989 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	32 070	31 150	26 030	17 160	12 220	9.430	5.773	5.659	6.541	11 120	19 050	29.160
	Low	9 227	11 370	10 080	7 719	5 048	3 897	2 410	1 715	3 158	3 115	4 406	12 110
	(year)	1976	1976	1973	1976	1976	1976	1976	1976	1989	1978	1978	1975
	High	51.270	64 730	54 230	26 520	31 020	30 110	9 956	13.830	25 450	28 180	39 810	48 270
	(year)	1984	1977	1981	1987	1983	1971	1973	1985	1974	1976	1986	1976
Runoff	Avg	55	49	45	29	21	16	10	10	11	19	32	50
	Low	16	18	17	13	9	7	4	3	5	5	7	21
	High	88	101	94	44	54	50	17	24	43	49	66	83
Rainfall (1970-1989)	Avg	86	60	78	49	61	65	54	66	75	76	79	91
	Low	18	7	17	2	28	5	25	18	15	6	35	20
	High	148	143	163	110	142	151	115	140	178	149	178	155

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	13.560		17 050		80
Lowest yearly mean			10.360	1973	
Highest yearly mean			22.160	1977	
Lowest monthly mean	2 699	Sep	1 715	Aug 1976	
Highest monthly mean	67 120	Feb	64 730	Feb 1977	
Lowest daily mean	1 592	27 Sep	1 093	29 Aug 1976	
Highest daily mean	167 400	3 Feb	253 600	28 Dec 1979	
Peak	209 800	3 Feb	300 500	28 Dec 1979	
10% exceedance	28 500		36 450		78
50% exceedance	5 695		11 070		51
95% exceedance	2.508		3 224		78
Annual total (million cu m)	427 60		538 00		79
Annual runoff (mm)	276		347		79
Annual rainfall (mm)	705		840		84
(1941-70 rainfall average (mm)			840)		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station with cableway (Replacement station for Bath St James). Upstream of the city of Bath. Situated immediately downstream of confluence with Bybrook. Section by railway bridge, area widely inundated in flood conditions, but all flows contained through bridge. Flows below 5 cumecs are inaccurate. Flows augmented by groundwater scheme in catchment. Mixed geology - predominantly clays and limestone with eastern tributaries rising from Chalk. Land use - mainly rural, some urbanisation.

054001 Severn at Bewdley 1990

Measuring authority: NRA-ST
First year: 1921
Grid reference: 32 (SO) 782 762
Level stn. (m OD): 17.00
Catchment area (sq km): 4325.0
Max alt. (m OD): 827

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	65.640	412.800	204.000	23.130	16.070	9.993	10.700	12.190	11.740	19.300	118.900	35.820
2	69.170	374.900	197.800	24.040	15.110	9.596	16.730	10.830	9.734	27.670	104.100	32.930
3	85.370	319.400	142.600	23.680	14.070	9.518	24.330	9.578	10.290	18.810	70.950	32.750
4	92.710	276.900	118.100	23.600	13.020	10.110	19.390	9.280	10.200	25.410	50.340	27.730
5	71.630	214.800	108.200	23.390	12.820	10.240	17.430	8.916	9.146	30.460	40.330	26.440
6	69.780	172.700	104.300	22.640	12.630	10.520	32.020	10.650	10.450	50.950	33.550	24.450
7	79.540	240.700	88.700	19.340	13.100	10.200	30.180	10.490	9.858	74.320	28.630	24.550
8	79.040	286.600	78.700	18.320	13.160	10.230	22.630	9.930	10.040	57.200	25.630	28.610
9	82.180	342.500	70.850	19.710	13.320	11.140	24.730	9.096	9.956	36.290	23.510	37.200
10	69.940	368.100	60.420	19.130	13.010	12.150	21.990	9.172	9.458	26.910	21.080	51.460
11	76.240	290.700	56.770	18.540	14.020	13.220	15.500	10.710	9.779	24.280	21.050	77.040
12	110.700	253.400	53.760	19.310	13.930	10.250	12.600	10.460	9.800	22.060	26.600	85.010
13	81.310	259.400	50.260	16.290	12.900	9.327	11.160	9.713	10.040	22.150	52.890	89.730
14	69.740	253.600	47.280	18.900	12.190	8.962	10.380	9.778	9.888	18.740	47.290	60.820
15	62.660	236.100	45.080	19.080	13.270	9.539	9.676	9.501	9.652	16.840	48.000	46.620
16	78.600	198.000	40.340	17.950	16.380	10.700	10.120	9.693	10.240	15.390	39.620	39.840
17	86.690	162.700	36.960	20.300	19.380	10.580	10.330	10.680	9.328	16.110	39.340	36.250
18	86.450	142.000	36.740	20.390	17.690	8.414	9.297	12.700	10.020	17.030	100.200	34.620
19	67.390	124.900	34.190	25.120	13.400	10.770	10.480	14.880	10.520	17.350	94.010	31.710
20	77.640	122.600	33.540	32.700	12.680	9.889	9.394	14.610	10.620	21.030	91.060	30.300
21	78.830	145.500	32.510	42.020	11.800	10.930	10.180	26.910	12.810	27.000	144.100	65.480
22	77.960	134.000	30.790	32.080	11.040	13.290	10.530	19.560	10.990	23.590	113.000	113.300
23	117.400	110.500	29.890	27.680	10.100	16.320	9.853	14.370	12.200	18.800	77.660	90.780
24	194.500	92.330	28.570	25.470	10.000	18.310	9.477	10.830	11.040	17.700	82.970	69.650
25	219.800	87.610	29.210	24.430	10.270	13.620	9.380	9.838	14.550	18.240	87.800	77.790
26	243.300	104.600	34.330	20.250	8.653	13.570	9.705	10.200	13.700	23.020	93.470	134.900
27	310.500	171.400	30.490	17.710	9.672	18.210	10.080	10.240	13.090	49.940	69.000	198.200
28	387.200	166.000	27.440	17.340	9.547	15.650	11.140	9.882	10.230	41.750	57.520	197.200
29	373.100		26.340	17.470	10.200	12.130	10.900	9.529	9.880	84.270	49.100	179.700
30	368.700		25.620	17.140	10.400	11.330	11.420	9.865	13.770	70.270	41.840	194.400
31	391.900		23.410		10.040		10.680	10.920		80.880		213.500
Average	139.500	216.600	62.170	22.240	12.710	11.620	14.270	11.450	10.770	32.700	62.450	77.060
Lowest	62.660	87.610	23.410	16.290	8.653	8.414	9.297	8.916	9.146	15.390	21.050	24.450
Highest	391.900	412.800	204.000	42.020	19.380	18.310	32.020	26.910	14.550	84.270	144.100	213.500
Peak flow	411.30	419.80	223.40	46.32	21.63	21.28	37.75	32.54	17.79	107.20	152.80	218.80
Day of peak	31	1	1	21	17	24	6	21	25	31	21	31
Monthly total (million cu m)	373.70	524.00	166.50	57.64	34.03	30.13	38.22	30.67	27.91	87.59	161.90	206.40
Runoff (mm)	86	121	39	13	8	7	9	7	6	20	37	48
Rainfall (mm)	162	144	25	34	29	70	32	46	60	109	75	114

Statistics of monthly data for previous record (Apr 1921 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	114.300	101.400	74.690	53.260	38.580	29.460	22.890	28.080	36.480	54.360	89.600	101.200
	Low	22.100	21.200	23.200	15.880	10.230	9.804	9.587	7.461	7.668	10.490	21.730	17.850
	(year)	1963	1934	1943	1938	1938	1976	1976	1976	1949	1947	1942	1933
	High	250.600	232.300	261.900	112.400	131.600	117.400	91.240	92.360	126.700	140.700	238.300	297.400
	(year)	1939	1946	1947	1947	1969	1931	1968	1927	1946	1967	1940	1965
Runoff:	Avg.	71	57	46	32	24	18	14	17	22	34	54	63
	Low	14	12	14	10	6	6	6	5	5	7	13	11
	High	155	130	162	67	81	70	57	57	76	87	143	184
Rainfall:	Avg.	92	68	64	60	69	61	72	78	77	85	96	95
	Low	23	8	3	5	18	5	10	13	5	13	13	10
	High	226	170	175	128	186	136	193	160	209	174	244	294

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	55.130		61.830		89
Lowest yearly mean			36.460	1964	
Highest yearly mean			94.740	1960	
Lowest monthly mean	10.770	Sep	7.461	Aug 1976	
Highest monthly mean	216.600	Feb	297.400	Dec 1965	
Lowest daily mean	8.414	18 Jun	5.990	4 Sep 1976	
Highest daily mean	412.800	1 Feb	637.100	21 Mar 1947	
Peak	419.800	1 Feb			
10% exceedance	143.300		148.200		97
50% exceedance	23.040		37.450		62
95% exceedance	9.531		11.180		85
Annual total (million cu m)	1739.00		1951.00		89
Annual runoff (mm)	402		451		89
Annual rainfall (mm)	900		917		98
(1941-70 rainfall average (mm)			936)		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station with rock control. Stage monitoring site relocated in 1950 and 1970; lowest flows not reliable in earlier record. Peak flows from 1972. US gauge since 1988. Sig. exports for PWS and CEGB; minimum flow maintained by Clywedog releases. Naturalised flow series accommodates major usages. Diverse catchment, wet western 50% from impermeable Palaeozoic rocks and river gravels; drier northern 50% from Drift covered Carboniferous to Liassic sandstones and marls. Moorland, forestry, mixed farming.

054002 Avon at Evesham 1990

Measuring authority: NRA-ST
First year: 1936
Grid reference: 42 (SP) 040 438
Level stn (m OD): 19.50
Catchment area (sq km): 2210.0
Max alt (m OD): 320

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15.740	98.360	34.010	8.784	6.702	4.984	5.354	4.276	4.101	5.367	5.679	5.159
2	21.820	134.600	26.000	9.350	6.703	4.908	5.126	4.100	4.026	4.930	5.463	5.125
3	19.630	124.600	20.060	9.556	6.592	4.888	4.991	4.058	4.566	4.813	5.064	4.964
4	16.480	101.300	17.520	9.195	6.419	4.792	5.633	4.000	6.064	4.655	4.715	5.074
5	14.740	63.920	16.370	8.679	6.167	5.291	6.890	3.852	6.012	4.606	4.656	5.070
6	17.750	44.050	15.530	8.397	6.042	5.615	5.569	3.786	5.929	4.445	4.766	4.995
7	24.860	98.320	14.700	8.473	6.065	5.506	6.229	3.889	5.868	4.347	4.797	5.475
8	24.080	145.700	13.800	8.083	5.921	6.525	6.364	3.943	5.711	4.162	4.725	7.921
9	20.540	97.640	12.850	7.995	6.088	7.890	5.213	3.939	5.694	4.157	4.645	11.750
10	18.590	59.790	11.600	8.012	6.100	6.706	4.752	3.924	5.567	4.147	4.917	37.630
11	16.460	65.150	11.250	7.854	5.954	5.629	4.580	3.947	5.713	4.100	5.171	58.260
12	16.250	76.310	11.220	7.960	5.613	5.292	4.545	3.869	5.726	4.199	5.812	54.820
13	19.130	59.720	11.960	8.825	5.535	5.167	4.458	3.878	5.647	4.155	5.836	28.030
14	17.270	62.890	11.960	8.904	5.493	5.027	4.365	3.973	5.695	4.097	7.041	16.230
15	16.040	59.090	11.050	8.965	6.387	4.889	4.290	4.169	4.584	4.017	5.972	11.070
16	15.050	46.990	10.490	8.171	8.241	4.929	4.225	4.361	4.343	4.110	5.515	9.001
17	14.050	37.350	10.220	7.877	6.068	4.897	4.208	4.353	4.438	4.128	5.789	8.394
18	13.120	32.410	9.900	8.695	5.510	5.234	4.188	5.749	4.609	12.260	6.684	7.658
19	12.580	28.460	11.800	9.778	5.341	5.853	4.176	7.073	5.138	14.880	6.326	7.194
20	13.340	25.830	14.130	11.560	5.224	5.669	4.087	7.455	5.067	17.670	11.920	7.552
21	12.130	24.090	11.420	12.280	5.198	6.441	4.066	5.265	4.421	9.622	10.220	9.886
22	12.850	20.950	10.430	9.800	5.176	10.260	3.914	4.659	4.329	6.822	8.012	9.228
23	39.390	19.650	9.960	8.473	5.183	7.566	3.937	4.416	4.523	5.065	6.195	8.113
24	43.090	18.890	10.100	8.217	5.129	5.976	3.943	4.245	4.698	4.981	6.242	7.514
25	57.990	20.220	9.981	7.735	5.004	5.487	3.717	4.162	5.279	6.139	6.173	17.830
26	51.080	27.730	9.322	7.587	5.050	5.236	3.830	4.093	4.593	13.070	5.758	27.820
27	42.180	30.820	9.220	7.603	4.828	5.060	3.982	4.101	4.319	12.370	5.441	27.360
28	75.130	31.100	9.077	7.101	4.776	5.299	4.073	4.053	4.214	16.350	5.359	21.640
29	59.370		8.908	6.824	4.800	4.890	4.089	4.244	5.028	12.150	5.310	25.420
30	66.700		8.975	6.719	4.896	4.970	4.449	4.208	6.504	8.804	5.169	25.970
31	107.100		8.773		4.848		4.467	4.168		6.682		22.510
Average	29.500	59.140	12.990	8.582	5.711	5.696	4.636	4.394	5.080	7.139	5.979	16.280
Lowest	12.130	18.890	8.773	6.719	4.776	4.792	3.717	3.786	4.026	4.017	4.645	4.964
Highest	107.100	145.700	34.010	12.280	8.241	10.260	6.890	7.455	6.504	17.670	11.920	58.260
Peak flow	115.70	164.20	36.07	13.23	10.22	12.14	8.66	8.66	7.12	22.48	14.43	60.65
Day of peak	31	8	1	21	16	22	7	20	30	20	20	12
Monthly total (million cu m)	79.02	143.10	34.78	22.24	15.30	14.76	12.42	11.77	13.17	19.12	15.50	43.60
Runoff (mm)	36	65	16	10	7	7	6	5	6	9	7	20
Rainfall (mm)	74	93	13	31	8	49	22	24	39	88	36	68

Statistics of monthly data for previous record (Dec 1936 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	28.250	27.470	22.690	15.390	11.510	8.746	6.600	6.782	6.737	9.396	17.440	22.820
	Low	5.143	4.868	2.261	3.237	2.220	1.935	2.256	2.042	1.968	2.485	2.681	3.549
	(year)	1950	1944	1944	1938	1944	1944	1976	1943	1959	1959	1943	1943
	High	73.520	77.930	75.600	36.100	37.690	27.380	42.220	16.100	24.200	45.420	55.910	65.160
	(year)	1939	1977	1947	1987	1983	1977	1968	1969	1960	1960	1960	1965
Runoff:	Avg	34	30	28	18	14	10	8	8	8	11	20	28
	Low	6	6	3	4	3	2	3	2	2	3	3	4
	High	89	85	92	42	46	32	51	20	28	55	66	79
Rainfall: (1937-1989)	Avg	60	43	49	43	55	54	56	70	54	58	64	61
	Low	13	3	5	5	15	10	8	5	3	6	8	15
	High	127	122	140	94	130	121	122	130	127	150	163	121

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	13.470		15.260		88
Lowest yearly mean			6.895	1944	
Highest yearly mean			25.020	1960	
Lowest monthly mean	4.394	Aug	1.935	Jun 1944	
Highest monthly mean	59.140	Feb	77.930	Feb 1977	
Lowest daily mean	3.717	25 Jul	1.274	9 Oct 1959	
Highest daily mean	145.700	8 Feb	277.100	11 Jul 1968	
Peak	164.200	8 Feb	371.000	11 Jul 1968	
10% exceedance	27.600		34.160		81
50% exceedance	6.171		8.254		75
95% exceedance	4.021		2.855		141
Annual total (million cu m)	424.80		481.60		88
Annual runoff (mm)	192		218		88
Annual rainfall (mm)	545		667		82
(1941-70 rainfall average (mm)			672)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions
- Augmentation from effluent returns.

Station and catchment description

Velocity-area station. Recording site, control and gauging site are widely separated; recording at a site where all flows contained. Gauge site can measure out-of-bank flows. Extensive modification to flow regime from abstractions and returns. Large catchment of low relief, draining argillaceous rocks almost exclusively. Contains many large towns, but chief land use is agriculture.

054008 Teme at Tenbury 1990

Measuring authority: NRA-ST
First year: 1956
Grid reference: 32 (SO) 597 686
Level stn (m OD): 48 00
Catchment area (sq km): 1134.4
Max alt. (m OD): 546

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19.700	102.100	44.150	5.594	3.506	2 279	2 032	1 257	1.114	1.795	7 604	6 798
2	21.970	94.470	34.530	5.660	3.392	2 223	1 950	1 167	1.111	1.449	6.443	6.165
3	23.910	76 550	29 190	5 541	3 315	2 178	1 839	1.122	1 080	1.581	5.485	5 708
4	19.980	60 690	25.490	5 259	3.211	2.093	2 014	1 058	1 024	1.678	4 692	5 306
5	18.320	50 340	23 030	5 088	3 115	2 123	2 144	1 024	1 029	1.509	4.154	4 977
6	27.990	45 950	20.460	4.990	3 019	2 178	1 953	0 992	1 062	1.440	3.755	4.927
7	23.980	146 200	18 140	4.831	2.980	2.152	1 925	1.009	1 033	1.383	3 465	5 093
8	20.850	127 000	16.410	4.655	2.918	2 117	1 876	0 999	1 010	1.293	3.244	6 174
9	18 990	79.660	14.590	4.844	2 971	2.173	1 755	0 991	0 998	1 243	3 096	6 460
10	18.430	63.160	13 360	4 633	3 155	2 113	1 660	0 995	0 979	1.195	3.043	13.860
11	17.220	68 100	12 470	4.499	2.967	1 979	1 612	1.027	0.985	1.165	3 034	20 700
12	16.790	70 480	11.640	4.397	2.839	1.976	1.556	1 037	0 999	1.153	4 359	25.060
13	16.030	68.200	12.170	4 386	2.769	1.955	1.530	1.061	0.997	1.147	5.449	17 100
14	15.270	67 060	10.900	4.464	2.708	1 906	1 472	1 083	0 985	1.116	5 959	13.070
15	14.670	57.940	10 060	4.498	3 330	1 853	1.421	1.076	0.978	1.202	5.940	10 790
16	14.500	46.830	9.503	4.399	3.935	1 817	1.389	1 057	0.977	1.211	5.652	9 475
17	13 650	42.530	9 098	4 387	3 049	1.779	1.481	1 044	1.056	1.176	6 391	8 539
18	12.670	37 210	8.734	4.471	2.744	1 871	1.422	1.148	1 120	1.232	7.140	7.869
19	13.140	32.790	8 623	4.820	2.625	1 932	1 348	1.506	1.056	1.288	7 545	7.122
20	12.930	31 150	8 459	5 406	2.583	1.965	1 297	1 525	0 987	1 550	19.500	7 328
21	13.480	30.120	8 036	5 017	2 514	2 557	1 287	1 398	0.986	1.588	16.760	11 910
22	20.740	26 790	7 425	4 630	2.425	3.028	1 309	1.237	1 017	1 400	12.570	10.520
23	54.340	24 460	7.109	4.358	2.336	2 348	1 256	1.172	1 208	1 296	10 390	9 791
24	51 910	23 240	7.140	4 168	2.266	1 994	1 238	1 152	1 214	1 537	18.700	9 805
25	69.800	29.530	6 959	4 004	2 198	1.971	1 233	1 138	1.137	1.907	19.300	29 090
26	63.370	40.050	6.548	3.968	2.174	1 975	1 216	1 108	1 087	3 425	15 140	42 040
27	105.600	42.030	6 366	3 896	2 140	1 897	1 247	1 066	1.085	3.287	12 180	42 360
28	173.200	45 970	6 220	3 796	2.091	1 830	1 361	1.056	1 057	4.300	10 130	35.860
29	110 000		5 963	3.710	2.203	1 770	1 332	1.100	1 236	5 536	8.790	43.720
30	124.000		5.769	3.606	2.397	1 877	1 352	1 130	1.638	5.345	7.717	38 520
31	114.500		5.635		2 213		1 347	1.108		7 677		37 770
Average	40.710	58.160	13 360	4.599	2.776	2 064	1 544	1.124	1 075	2.067	8.254	16.260
Lowest	12 670	23 240	5 635	3 606	2 091	1.770	1 216	0 991	0.977	1.116	3 034	4 927
Highest	173.200	146 200	44.150	5.660	3.935	3 028	2.144	1.525	1.638	7.677	19 500	43.720
Peak flow	216.30	166 90	51.29	5.70	4.38	3 20	2.18	1.63	1.79	8.10	24.18	49 85
Day of peak	28	7	1	2	16	22	4	19	30	31	20	26
Monthly total (million cu m)	109.00	140 70	35.78	11.92	7.44	5 35	4 13	3 01	2.79	5.54	21 39	43.54
Runoff (mm)	98	124	32	11	7	5	4	3	2	5	19	38
Rainfall (mm)	149	134	17	30	28	65	23	35	48	99	60	93

Statistics of monthly data for previous record (Oct 1956 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	28 030	24 660	21 530	15.180	10 520	6.111	4 168	4 075	6 039	11 260	16.540	25 020
	Low	6 281	8.011	7 435	4.691	2 569	1.558	1 010	0 744	1 086	1 347	3.087	5 567
	(year)	1984	1985	1976	1976	1976	1976	1976	1976	1959	1959	1975	1975
	High	51 630	56.000	51.940	32.850	35 380	13 090	21 920	16 680	29.650	43.130	50.140	57 290
	(year)	1960	1977	1981	1987	1969	1969	1968	1957	1958	1960	1960	1965
Runoff:	Avg	86	53	51	35	25	14	10	10	14	27	38	59
	Low	15	17	18	11	6	4	2	2	2	3	7	13
	High	122	119	123	75	84	30	52	39	68	102	115	135
Rainfall:	Avg.	85	83	71	59	64	58	58	72	79	75	82	92
	Low	23	8	5	7	24	12	15	23	3	17	33	23
	High	157	138	146	132	174	125	122	165	211	183	169	183

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	12 390		14.390		86
Lowest yearly mean			7.279	1964	
Highest yearly mean			23.490	1960	
Lowest monthly mean	1 075	Sep	0 744	Aug 1976	
Highest monthly mean	58 160	Feb	57.290	Dec 1965	
Lowest daily mean	0 977	16 Sep	0 647	27 Aug 1976	
Highest daily mean	173 200	28 Jan	248 900	4 Dec 1960	
Peak	216 300	28 Jan	266 500	4 Dec 1960	
10% exceedance	36.130		34.290		105
50% exceedance	3 471		8.681		40
95% exceedance	1 022		1 575		65
Annual total (million cu m)	390 70		454 10		86
Annual runoff (mm)	344		400		86
Annual rainfall (mm)	781		858		91
(1941-70 rainfall average (mm)			878)		

Factors affecting flow regime

- Augmentation from effluent returns.
- Natural to within 10% at 95 percentile flow.

Station and catchment description

Velocity-area station with a gravel control. Upstream shoaling may render low flow rating variable from year to year. Rarely goes out of bank. Adjustments small and dispersed; natural catchment. Left bank characterised by high relief hills and broad valleys. Steep and narrow on the right bank. Geology mainly Palaeozoic sediments with Pre-Cambrian crystalline rocks of the Longmynd. Relatively Drift free, some valley gravel and Boulder Clay in the lower reaches. Forestry, grazing..

055026 Wye at Ddol Farm 1990

Measuring authority: NRA-WEL
First year: 1937
Grid reference: 22 (SN) 976 676
Level stn (m OD): 192 80
Catchment area (sq km): 174.0
Max alt. (m OD): 752

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	4.187	28.720	13 520	1.842	1.910	0 624	8 888	0.615	1 832	4 002	23 510	3 823
2	5.178	24 690	11 000	2.197	1.746	0.672	4.942	0 524	1.454	5.169	13.310	3 421
3	4 579	16 160	8 883	2 442	1 617	0 680	3 354	0 465	1 576	11.610	8 806	3 105
4	3.722	11.140	10 360	2.149	1 483	0 687	5 189	0 429	1.408	7 636	6 564	2.831
5	3 536	8 018	11 480	1 964	1 364	1 012	13 310	0.403	1.481	68.440	5 260	2 588
6	5 222	10 310	9 417	1.815	1 283	1 513	5 646	0 389	2 181	25.190	4 446	2 466
7	6.335	105 600	7 943	1.653	1 221	1 205	9 538	0 376	1.643	11 830	3 857	3.636
8	6 268	41.230	6 353	1.557	1.266	3 430	5.838	0 370	1 350	7 282	3 404	3 309
9	6.136	19.210	5.387	1 492	1.672	2.463	4.103	0 362	1 155	5.761	3.146	3 061
10	23.850	18 370	4 670	1 481	1.357	1 687	3 166	0.364	1.009	4 883	3 169	5 140
11	21.870	45 520	3 971	1 420	1 195	1 338	2 627	0 377	0.912	4 356	3 356	14 460
12	12 820	28 070	3.473	1 472	1 093	1 168	2.254	0 406	0 840	3 614	6 592	10 030
13	8.449	45 810	3 591	1 470	0 996	1.013	1 936	0 413	0.771	3.145	6 518	5.831
14	7 410	26 950	3.014	1 491	1 025	0 902	1 651	0 447	0 706	2 825	7 895	4 731
15	13.810	16 250	2 684	1 681	2 603	0.813	1 462	0.555	0.647	3 602	5 663	4 057
16	15.900	10 560	2 458	1 773	1.909	0 744	1 325	0 796	0 624	3 545	10 900	3 779
17	11.450	12 010	2 196	2 406	1 374	0.693	1.154	0 815	0.717	2 958	43.960	3 364
18	7 791	8 261	2 039	3 715	1 164	0 727	1 036	1 425	1 471	3 550	17 500	3 076
19	15.290	14 420	2 221	9 056	1 029	0 794	0.935	12 360	6 436	3 855	37.480	2 832
20	10 750	17.550	2.108	6 479	0 941	0 857	0 837	5 549	3 813	3 533	36 080	69 110
21	15.810	13 220	2 416	4 680	0 879	2 030	0 777	3 485	3 329	3 124	21.180	49 500
22	16.860	8 891	2.091	3.743	0 807	2 524	0.728	2.431	5 042	2 920	12.370	24 010
23	48 360	6 938	1 915	3 146	0 745	2 039	0 665	1.896	7 625	2 776	11 480	15 050
24	21.180	6.703	6 291	2.737	0 696	1.729	0 621	1 521	4.652	2.853	13.650	11 520
25	61 480	10.870	3 709	2.442	0 663	4 143	0 582	1.243	3 323	7 077	11 100	29 670
26	24 730	12 540	2.943	4 030	0 639	3.264	0.545	1 069	2 600	7.305	9 610	37 040
27	23 230	9 079	2 639	3 308	0.595	2 461	0 627	0 953	2 172	12 090	7.505	17 770
28	23.540	19.620	2.585	2 614	0.561	2 096	0.588	1.179	1 865	26 790	5.994	16 390
29	104.700		2 261	2.328	0 658	1 831	0 586	1 803	3.509	16 560	5.033	18 290
30	53 210		2.091	2.112	0.745	2 650	1.087	1 686	8 017	42.210	4.360	15.800
31	32.850		1 922		0 618		0 768	2 085		42.410		22 860
Average	20.020	21 310	4.762	2.690	1.157	1 593	2.799	1 509	2 472	11.380	11.790	13 310
Lowest	3 536	6.703	1 915	1 420	0 561	0 624	0 545	0.362	0 624	2.778	3.146	2 466
Highest	104.700	105 600	13 520	9 056	2 603	4 143	13.310	12 360	8 017	68.440	43.960	69.110
Peak flow	188.50	181.40	15 41	12 77	4 01	7.62	35.15	43 19	29.06	159 90	92 50	158 50
Day of peak	29	7	1	19	15	8	5	19	18	5	19	20
Monthly total (million cu m)	53 61	51.56	12.76	6 97	3 10	4.13	7 50	4 04	6 41	30 49	30 56	35.64
Runoff (mm)	308	296	73	40	18	24	43	23	37	175	176	205
Rainfall (mm)	297	279	67	78	39	121	68	89	115	235	150	217

Statistics of monthly data for previous record (Oct 1937 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	10 570	8 641	6 783	4 897	3 187	2 677	2 700	3.747	5 247	7 412	10 200	11.010
	Low	1.972	1 476	1 373	1 014	0 485	0 497	0 318	0 177	0.291	0 683	2 011	1 947
	(year)	1940	1947	1943	1974	1980	1975	1984	1976	1959	1972	1945	1963
	High	20 990	18 000	19 610	12.460	8 773	8 867	8.455	10 370	16 830	18 840	22 030	23 930
	(year)	1948	1946	1981	1972	1979	1985	1939	1957	1946	1981	1939	1965
Runoff	Avg	163	121	104	73	49	40	42	58	78	114	152	169
	Low	30	21	21	15	7	7	5	3	4	11	30	30
	High	323	250	302	186	135	132	130	160	251	290	328	368
Rainfall	Avg	180	132	124	97	99	92	104	124	141	155	183	193
	Low	41	10	25	11	25	21	14	13	13	28	28	28
	High	386	310	310	206	204	202	267	251	325	329	356	452

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	7 825		6 413		122
Lowest yearly mean			4 304	1976	
Highest yearly mean			8 529	1954	
Lowest monthly mean	1.157	May	0 177	Aug 1976	
Highest monthly mean	21 310	Feb	23 930	Dec 1965	
Lowest daily mean	0.362	9 Aug	0 083	15 Aug 1983	
Highest daily mean	105 600	7 Feb	199 400	28 Oct 1989	
Peak	188 500	29 Jan	767.200	28 Oct 1989	
10% exceedance	19 650		15 480		127
50% exceedance	3 225		3 512		92
95% exceedance	0 590		0 532		111
Annual total (million cu m)	246 80		202 40		122
Annual runoff (mm)	1418		1163		122
Annual rainfall (mm)	1755		1624		108
[1941-70 rainfall average (mm)			1618]		

Factors affecting flow regime

- Abstraction for public water supplies.

Station and catchment description

Initially, gauged nearby at Rhayader (55005, 1937-69); resited as velocity-area station with a rock bar as control. Informal Flat V installed 1972. Bankfull width - 30m. Cableway span 54m. All but exceptional floods contained. Lowest g/s on Wye unaffected by large water supply res (flows from the Elan valley complex enter just d/s). Wet, upland catchment draining impermeable, metamorphosed Silurian sediments. High relief, headwaters reach over 600m, and feature steep sided and high gradient streams. Moorland and forestry.

056001 Usk at Chain Bridge 1990

Measuring authority: NRA-WEL
First year: 1957
Grid reference: 32 (SO) 345 056
Level stn. (m OD): 22.60
Catchment area (sq km): 911.7
Max alt. (m OD): 886

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	38.830	183.100	68.160	10.720	7.331	6.071	15.010	4.640	3.349	10.380	25.960	16.040
2	52.270	160.500	54.380	11.140	6.956	6.115	11.460	4.280	3.298	6.852	21.410	14.760
3	46.940	122.200	47.590	12.320	6.742	5.981	7.718	4.090	3.332	21.460	17.930	13.820
4	37.560	86.400	42.740	11.300	6.495	5.888	8.625	3.964	3.376	12.170	15.530	12.880
5	34.530	68.750	41.520	10.320	6.300	5.882	13.600	3.763	3.425	24.870	13.770	11.990
6	58.210	84.210	37.390	9.792	6.110	6.104	10.520	3.669	3.444	27.150	12.380	11.500
7	43.040	472.200	34.430	9.260	5.934	6.141	8.762	3.634	3.622	20.830	11.340	11.480
8	45.440	207.000	30.150	8.855	5.867	5.817	8.651	3.634	3.513	13.620	10.570	15.730
9	37.350	110.800	26.460	8.661	5.947	6.121	7.534	3.569	3.622	10.910	10.150	13.700
10	47.650	100.400	24.520	8.536	5.922	5.841	6.471	3.537	3.536	9.948	10.240	15.890
11	58.260	192.500	23.160	8.325	5.749	5.599	5.854	3.405	3.578	11.880	10.020	19.850
12	47.750	119.000	21.470	8.146	5.522	5.505	5.418	3.359	3.591	11.520	11.920	29.080
13	41.000	107.000	23.570	8.744	5.351	5.430	5.048	3.301	3.616	8.845	12.560	18.870
14	39.060	91.000	20.790	8.758	5.262	5.303	4.680	3.336	3.610	7.858	21.140	16.580
15	39.850	80.750	18.500	10.200	7.413	5.208	4.416	3.511	3.593	7.972	14.380	15.130
16	45.880	64.420	17.480	8.650	11.500	5.142	4.271	3.718	3.527	8.555	13.840	14.310
17	47.320	68.220	16.630	8.253	7.093	5.097	4.083	3.402	3.522	7.211	22.100	13.450
18	35.340	57.790	15.740	9.624	5.974	5.376	3.908	3.393	3.484	6.773	21.050	12.700
19	62.200	104.600	16.420	10.630	5.504	5.622	3.903	4.020	3.509	6.644	21.260	11.870
20	47.410	138.800	17.580	14.550	5.269	6.516	4.400	6.340	4.074	6.428	41.000	32.860
21	104.000	92.110	16.130	12.530	5.104	8.475	4.635	4.614	3.717	5.906	57.070	60.600
22	102.700	68.480	15.290	11.370	4.923	13.510	4.820	3.658	3.642	5.506	34.450	41.840
23	196.900	56.910	13.920	10.760	5.151	7.250	4.712	3.035	3.821	5.265	31.860	43.390
24	97.730	54.060	15.750	9.778	5.552	6.165	4.640	2.847	4.104	5.607	57.790	46.780
25	204.000	87.210	15.870	9.154	5.434	7.986	4.615	2.707	4.024	11.210	38.620	145.700
26	98.540	113.300	14.410	8.803	5.346	7.800	4.510	2.563	3.663	31.650	32.010	113.200
27	195.800	66.580	13.080	9.545	5.236	6.143	4.785	2.512	3.209	27.430	26.120	72.340
28	170.900	89.650	12.770	8.483	5.144	5.380	4.834	2.502	2.917	62.540	22.620	95.360
29	229.900		12.210	8.019	5.298	4.929	4.816	2.616	3.907	32.000	19.990	99.130
30	228.800		11.530	7.690	6.042	6.931	7.096	3.039	20.110	29.590	17.900	79.000
31	182.600		11.000		6.112		5.912	3.739		34.050		71.490
Average	87.600	116.000	24.210	9.764	6.051	6.311	6.442	3.561	4.124	15.890	22.570	38.430
Lowest	34.530	54.060	11.000	7.690	4.923	4.929	3.903	2.502	2.917	5.265	10.020	11.480
Highest	229.900	472.200	68.160	14.550	11.500	13.510	15.010	6.340	20.110	62.540	57.790	145.700
Peak flow	402.40	627.40	79.86	17.18	16.29	18.97	18.36	7.45	40.84	98.62	74.32	286.30
Day of peak	27	7	1	20	16	22	5	20	30	28	21	25
Monthly total (million cu m)	234.60	280.60	64.85	25.31	16.21	16.36	17.25	9.54	10.69	42.56	58.49	102.90
Runoff (mm)	257	308	71	28	18	18	19	10	12	47	64	113
Rainfall (mm)	289	289	39	51	35	101	44	41	79	146	96	169

Statistics of monthly data for previous record (Mar 1957 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	50.850	41.250	35.260	24.080	17.330	11.160	8.241	10.560	16.170	29.070	39.550	50.630
	Low	10.850	12.680	10.010	8.120	6.125	4.273	3.390	2.698	2.939	4.303	13.760	17.770
	(year)	1964	1963	1962	1974	1984	1957	1976	1976	1959	1978	1988	1988
	High	88.650	95.720	100.700	49.330	46.590	26.740	27.490	38.540	45.680	86.350	99.840	112.700
	(year)	1974	1958	1981	1985	1983	1972	1968	1985	1974	1967	1960	1959
Runoff:	Avg.	149	110	104	68	51	32	24	31	46	85	112	149
	Low	32	34	29	23	18	12	10	8	8	13	39	52
	High	260	254	296	140	137	76	81	113	130	254	284	331
Rainfall:	Avg.	156	111	117	85	91	76	77	98	122	139	147	170
	Low	28	10	15	8	16	17	21	25	8	19	55	46
	High	331	223	303	175	221	144	177	210	259	325	323	351

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	27.890		27.800		100
Lowest yearly mean			14.880	1973	
Highest yearly mean			44.050	1960	
Lowest monthly mean	3.561	Aug	2.698	Aug 1976	
Highest monthly mean	116.000	Feb	112.700	Dec 1959	
Lowest daily mean	2.502	28 Aug	1.607	27 Aug 1976	
Highest daily mean	472.200	7 Feb	585.400	27 Dec 1979	
Peak	627.400	7 Feb	945.000	27 Dec 1979	
10% exceedance	75.040		63.730		118
50% exceedance	10.270		16.670		62
95% exceedance	3.397		4.266		80
Annual total (million cu m)	879.50		877.30		100
Annual runoff (mm)	965		962		100
Annual rainfall (mm)	1379		1389		99
[1941-70 rainfall average (mm)			1378]		

Factors affecting flow regime

- Reservoir(s) in catchment.

Station and catchment description

Velocity-area station; permanent cableway. Low flows measured at complementary station downstream (56010 - Trostrey weir). There is a partial impact on flows resulting from three large existing public water supply reservoirs in upper catchment. Intake to canal upstream of gauge. Some naturalised flows available. Geology - mainly Old Red Sandstone. Hill farming in upper areas, with dairy or livestock farming below; forest 3%. Peaty soils in uplands, seasonally wet.

062001 Teifi at Glan Teifi 1990

Measuring authority: NRA-WEL
First year: 1959
Grid reference: 22 (SN) 244 416
Level stn. (m OD): 5.20
Catchment area (sq km): 893.6
Max alt. (m OD): 593

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	30 360	158 000	50 520	8 057	5 830	3 187	5 406	2 901	3 009	16.430	40 220	23 040
2	38 840	144 600	43.510	8 086	5 343	3.112	7.635	2.675	2 830	14 300	68.250	20 620
3	39 840	105 000	37 700	9 265	5 038	3 065	5 547	2 527	2 706	28 120	49 510	18.810
4	30 640	77 480	32.980	10 310	4 829	3 065	7 427	2.347	2 486	20 610	40.130	17.320
5	28.110	62 120	30 570	8 683	4.669	3 094	12.840	2 095	2 343	31 420	32 020	15.890
6	44 440	58 050	27 510	7 626	4.547	3.290	12.170	1 762	2 307	35 520	26 530	14 850
7	44.360	158 600	24 130	7 345	4 432	3 221	10 690	1 604	2 216	39.700	22 980	28 850
8	46 120	162 700	21 960	6 932	4 335	3 264	10.770	1 603	2 115	27 000	20 390	34 240
9	41 310	120 100	19 930	6 716	4 352	4 074	8 255	1 667	2 069	18 380	18 430	27 630
10	41.720	95 510	18 590	6 663	4 494	4 290	6 672	1.694	2 004	14 060	17.160	24 020
11	46 700	109 900	17 450	6 663	4 383	3 501	5 808	1 683	1 923	12 270	16.990	25 060
12	52.340	105 000	15 990	6 477	4 200	3.150	5 254	1 622	1 840	10 830	20 830	30.950
13	51 170	86 300	16 110	6.451	4 033	2.952	4 808	1 660	1 810	9 430	25 800	27 340
14	48 820	79 720	15 240	6 772	4 091	2.939	4.302	1.747	1 809	8 722	29.140	22.080
15	42 460	71 400	13 760	6.716	6.714	2 895	3 939	1 842	1 804	11 270	24.470	19.240
16	42.560	59 310	13 170	6 425	7 568	2 860	3 722	1 842	1 785	13 490	22.520	17 800
17	41.650	59 280	12 560	6 242	5.918	2.830	3 485	2 018	1 785	11 690	27 230	16 730
18	35 010	52.990	12.130	6 610	4 872	2 884	3 253	2 076	1 785	10 130	29 030	15.520
19	41.760	77 290	11 960	7 967	4 353	3.125	2 945	2 237	2.059	9 765	36 010	14.910
20	42 260	107.100	11 650	13 740	4 038	3 092	2.796	3 213	4.814	9 303	62 800	33.200
21	54 110	92 500	10 970	10 920	3 857	3 959	2 646	3.707	3.289	8 493	83.490	72 870
22	75.180	71 010	10 470	8 535	3 729	5.790	2.540	3 096	3.218	7 888	87 980	73.920
23	119.200	56 700	9 824	7 485	3.301	5 250	2 421	2 856	6 808	7 537	82.100	74.830
24	102 100	49 900	10 020	7 096	3.200	4.184	2.359	2 794	12 650	8.432	91.320	65 680
25	124 400	57.460	12.210	6 373	3.142	3 875	2 292	2.768	11 230	20 410	68.730	130 300
26	101.600	57.870	10 900	6 297	3.116	3.816	2.280	2 744	7 818	43 020	54 430	116 000
27	128 900	49 160	9 665	8 261	3 082	3 865	2 280	2 744	5 706	41.750	44 660	86 450
28	188.700	54 570	9.602	7 660	3 064	3 480	2 280	2 744	4 744	55 340	37 170	83.370
29	185 800		9.165	6 691	3 125	3 313	2.586	3.435	5.135	48 520	30.800	76.880
30	193 700		8 879	6.139	3.277	3.946	3 557	4 451	16 360	44 030	26 310	70 100
31	173.400		8.768		3 086		3.080	3.735		43 660		105.000
Average	73.470	87.130	17 990	7 640	4 323	3.512	5 034	2 448	4 082	21 980	41 250	45.270
Lowest	28.110	49 160	8 768	6 139	3 064	2 830	2 280	1 603	1 785	7 537	16 990	14 850
Highest	193.700	162 700	50 520	13 740	7 568	5.790	12 840	4.451	16 360	55 340	91 320	130.300
Peak flow	206 40	193 20	55 56	15 05	8 18	6 41	15 23	4 76	20 73	60 91	107 70	136 50
Day of peak	28	7	1	20	15	22	5	30	30	28	23	25
Monthly total (million cu m)	196 80	210 80	48 20	19 80	11.58	9.10	13 48	6.56	10 58	58 88	106 90	121.30
Runoff (mm)	220	236	54	22	13	10	15	7	12	66	120	136
Rainfall (mm)	241	201	37	50	35	91	59	65	93	154	120	172

Statistics of monthly data for previous record (Jul 1959 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	47 270	37 780	32 050	22 560	17.670	11 130	8 378	12.290	16 840	35 710	45 820	53 350
	Low	7 086	11 140	8 280	7 481	4 228	2.975	1 819	1.127	1 073	3 886	16.060	17.820
	(year)	1963	1965	1962	1974	1984	1984	1984	1976	1959	1972	1983	1963
	High	106 000	81 100	96 730	41 810	36 780	41.700	24.930	39 210	48 680	102 000	85 130	93 960
	(year)	1974	1974	1981	1985	1979	1972	1968	1985	1974	1981	1986	1965
Runoff	Avg	142	103	96	65	53	32	25	37	49	107	133	160
	Low	21	30	25	22	13	9	5	3	3	12	47	53
	High	318	220	290	121	110	121	75	118	141	306	247	282
Rainfall	Avg	145	93	107	84	79	79	79	100	116	152	153	161
	Low	28	2	25	10	22	17	25	16	10	40	75	28
	High	326	213	312	163	168	148	166	180	242	293	279	315

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	25.810		28 380		91
Lowest yearly mean			18 860	1964	
Highest yearly mean			38 230	1974	
Lowest monthly mean	2 448	Aug	1 073	Sep 1959	
Highest monthly mean	87 130	Feb	106 000	Jan 1974	
Lowest daily mean	1 603	8 Aug	0 731	29 Aug 1976	
Highest daily mean	193 700	30 Jan	373 600	18 Oct 1987	
Peak	206 400	28 Jan	448 800	18 Oct 1987	
10% exceedance	74 000		63 740		116
50% exceedance	9 479		18 810		50
95% exceedance	1 936		3.017		64
Annual total (million cu m)	813 90		895 60		91
Annual runoff (mm)	911		1002		91
Annual rainfall (mm)	1318		1348		98
(1941-70 rainfall average (mm)			1364)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies

Station and catchment description

Velocity-area station. Straight reach (width: 35m), natural control. Flood flows spill over right bank. Public water supply impounding reservoirs in upland area where there is mostly hill farming. Tregaron bog (10 sq. km.) has partial effect on flows; sensibly natural regime. Geology - mainly Ordovician and Silurian deposits. Dairy farming predominates in southern area. Forest: 5%. Peaty soils on hills, seasonally wet. Apart from Tregaron bog, most of the lower areas have soils with permeable substrate.

065001 Glaslyn at Beddgelert 1990

Measuring authority: NRA-WEL
First year: 1961
Grid reference: 23 (SH) 592 478
Level stn (m OD): 32.90
Catchment area (sq km): 68.6
Max alt. (m OD): 1085

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	3.131	7.333	6.148	1.096	1.112	1.286	7.715	0.855	1.557	2.163	16.680	1.743
2	4.964	5.568	5.147	1.633	1.000	1.277	4.204	0.648	1.215	21.020	19.900	1.264
3	4.714	3.669	3.956	2.859	0.849	1.935	3.005	0.515	1.405	16.530	6.401	1.176
4	3.816	7.572	3.419	2.708	0.805	1.299	17.490	0.432	1.173	9.612	3.817	1.261
5	4.059	5.968	3.435	2.729	0.804	2.237	12.070	0.381	5.437	26.440	3.133	1.317
6	8.847	7.577	3.185	2.414	0.659	7.231	7.110	0.322	3.891	20.120	2.977	1.502
7	24.630	25.980	2.884	1.738	0.603	3.532	9.187	0.290	2.706	7.901	2.525	13.650
8	10.380	13.180	2.469	1.289	0.849	7.209	6.059	0.268	1.923	4.807	2.161	10.140
9	7.772	11.300	1.983	1.094	1.200	3.669	3.667	0.278	1.381	4.665	1.897	7.233
10	27.410	8.518	1.916	1.070	1.197	2.139	2.567	0.331	1.089	5.434	2.034	8.925
11	22.770	21.650	1.689	1.055	0.924	1.457	2.088	0.380	0.906	7.130	3.364	21.380
12	14.590	9.159	1.390	1.163	0.710	1.119	1.874	0.364	0.760	4.117	6.512	12.150
13	5.957	6.821	1.798	1.178	0.600	0.925	1.397	0.351	0.664	2.901	11.690	4.879
14	10.480	5.808	2.131	1.941	0.610	0.794	1.001	0.408	0.597	2.662	8.009	3.566
15	13.770	5.290	3.356	1.859	1.356	0.728	0.814	0.891	0.531	4.535	5.539	2.595
16	16.660	4.108	3.841	1.580	1.867	0.632	0.720	1.334	0.464	7.665	13.030	2.157
17	8.662	9.971	2.385	1.841	1.523	0.581	0.677	1.830	0.471	5.878	20.730	1.969
18	6.124	5.322	2.005	3.058	1.046	0.738	0.698	2.359	4.191	4.951	6.290	1.642
19	19.980	60.910	2.263	6.437	0.819	0.749	0.768	8.593	6.123	3.746	13.010	1.429
20	13.850	28.480	1.956	4.727	0.636	0.895	0.707	5.861	3.701	2.591	18.450	19.800
21	24.710	8.658	4.711	2.980	0.519	1.617	0.560	4.743	3.367	1.806	12.540	13.960
22	19.030	5.389	2.957	2.072	0.479	1.973	0.453	3.857	2.699	1.414	5.939	28.720
23	22.550	4.398	2.304	1.545	0.533	1.397	0.395	2.579	3.125	1.306	4.497	15.870
24	12.000	15.390	5.171	1.304	0.572	3.765	0.359	1.452	4.873	1.274	4.190	8.563
25	23.590	13.690	3.444	1.220	0.504	3.668	0.310	1.008	5.081	1.821	3.035	19.620
26	7.368	11.150	2.750	4.281	0.468	5.245	0.293	0.784	3.324	2.222	2.911	31.010
27	5.338	7.067	2.714	3.144	0.405	6.244	0.315	0.698	2.410	4.019	3.017	8.081
28	5.468	7.870	2.706	1.967	0.384	3.568	0.310	1.905	2.030	5.692	2.838	25.520
29	21.030		2.141	1.493	0.970	2.444	1.833	4.167	1.897	3.667	2.402	8.567
30	12.360		1.608	1.243	1.031	3.981	2.232	2.300	3.118	4.578	2.017	4.172
31	11.120		1.283		0.831		1.236	2.015		19.030		7.820
Average	12.800	11.710	2.876	2.157	0.834	2.478	2.971	1.684	2.404	6.829	7.051	9.409
Lowest	3.131	3.669	1.283	1.055	0.384	0.581	0.293	0.268	0.464	1.274	1.897	1.176
Highest	27.410	60.910	6.148	6.437	1.867	7.231	17.490	8.593	6.123	26.440	20.730	31.010
Peak flow	55.38	85.35	6.91	7.96	1.97	13.79	28.93	14.73	14.50	52.25	32.80	71.25
Day of peak	7	19	1	19	29	6	4	19	18	2	17	8
Monthly total (million cu m)	34.29	28.32	7.70	5.59	2.23	6.42	7.96	4.51	6.23	18.29	18.28	25.20
Runoff (mm)	500	413	112	82	33	94	116	66	91	267	266	367
Rainfall (mm)	551	438	123	137	77	195	149	147	182	372	247	446

Statistics of monthly data for previous record (Dec 1961 to Dec 1989—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	7.776	5.597	6.326	3.810	3.319	3.259	3.514	5.050	5.908	7.433	8.473	8.992
	Low	1.535	1.139	1.734	0.814	0.325	0.625	0.495	0.305	1.840	3.526	3.399	1.793
	(year)	1963	1986	1984	1974	1980	1988	1984	1976	1989	1978	1983	1963
	High	13.630	13.040	15.600	8.228	7.064	7.429	7.132	12.860	11.830	13.370	14.460	16.400
	(year)	1983	1977	1981	1975	1986	1971	1978	1985	1974	1980	1980	1965
Runoff:	Avg	304	199	247	144	130	123	137	197	223	290	320	351
	Low	60	40	68	31	13	24	19	12	70	138	128	70
	High	532	460	609	311	276	281	278	502	447	522	546	640
Rainfall:	Avg	310	200	260	180	175	195	204	268	275	323	356	353
	Low	28	20	69	20	39	41	60	16	35	136	130	74
	High	563	475	638	482	334	358	380	563	508	726	564	700

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	5.233		5.794		90
Lowest yearly mean			4.185	1968	
Highest yearly mean			6.942	1980	
Lowest monthly mean	0.834	May	0.305	Aug 1976	
Highest monthly mean	12.800	Jan	16.400	Dec 1965	
Lowest daily mean	0.268	8 Aug	0.039	9 Jul 1973	
Highest daily mean	60.910	19 Feb	86.290	9 Mar 1989	
Peak	85.350	19 Feb	220.700	26 Mar 1987	
10% exceedance	13.680		13.250		103
50% exceedance	2.731		3.220		85
95% exceedance	0.430		0.524		82
Annual total (million cu m)	165.00		182.80		90
Annual runoff (mm)	2406		2665		90
Annual rainfall (mm)	3064		3099		99
[1941-70 rainfall average (mm)			3030]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Regulation for HEP.

Station and catchment description

A 20m wide river section rated by current meter and, in the past, by dilution gauging. Rating tends to be insensitive at low flows due to subtle movements in the natural bed control downstream. High flow gauging restricted to peaks and troughs because of rapid water level changes. Station bypassed at high flows. Lakes (Dinas and Gwynant) and HEP discharge from the higher Llyn Llydaw marginally affect records. Catchment drains the southern flanks of Snowdonia with much bare rock exposure (impermeable Ordovician volcanics).

067015 Dee at Manley Hall 1990

Measuring authority: NRA-WEL
First year: 1937
Grid reference: 33 (SJ) 348 415
Level stn. (m OD): 25.40
Catchment area (sq km): 1019.3
Max alt. (m OD): 884

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	27.310	156.400	93.980	9.808	9.799	10.360	15.050	9.765	10.100	16.580	52.700	22.020
2	29.060	138.500	85.510	9.845	10.030	10.300	13.280	9.745	10.110	14.390	50.340	19.650
3	31.510	110.900	66.640	10.610	10.270	10.200	11.370	9.962	9.925	30.590	41.820	17.910
4	26.290	85.730	59.810	11.380	9.905	10.230	14.350	10.720	9.952	30.060	33.190	16.470
5	24.110	68.760	55.490	12.920	9.956	10.370	22.730	10.910	10.050	40.810	27.080	14.720
6	28.210	60.080	47.640	15.130	10.020	10.960	22.540	10.670	10.170	54.270	22.840	13.830
7	29.260	136.900	41.920	15.230	10.030	11.070	16.930	10.540	10.080	61.790	19.840	16.630
8	38.860	140.900	36.430	13.450	10.020	11.550	16.190	10.730	9.805	43.950	17.250	20.850
9	35.570	125.300	32.430	11.860	11.050	10.740	14.470	10.790	9.725	31.970	15.220	22.460
10	38.170	102.400	28.350	9.241	10.430	9.464	10.560	10.780	9.627	27.080	14.400	29.790
11	65.370	123.600	24.920	8.842	9.417	9.263	10.470	10.680	9.412	25.530	16.130	50.450
12	69.710	111.200	21.560	9.095	9.717	10.230	10.410	10.780	9.302	22.880	19.060	66.970
13	54.880	107.200	19.650	9.841	9.933	10.380	10.400	10.790	9.548	18.380	19.670	47.260
14	42.740	84.460	18.180	10.040	10.050	10.280	10.710	10.980	10.360	13.300	23.170	37.560
15	46.630	69.530	16.720	11.870	12.050	10.110	11.060	11.420	10.420	12.210	21.270	31.070
16	49.940	55.260	15.600	10.720	13.160	10.090	10.990	11.420	10.510	13.220	22.370	27.540
17	52.040	49.610	14.100	10.440	9.263	10.130	10.490	11.400	10.450	11.910	58.900	24.350
18	43.400	44.540	13.150	12.720	9.227	10.290	10.310	11.300	10.430	11.420	61.670	21.800
19	51.330	62.470	12.710	15.510	9.671	10.530	10.350	12.370	10.990	12.190	61.510	19.670
20	45.600	98.880	11.940	25.040	9.903	11.030	10.290	13.650	10.150	11.680	76.110	41.510
21	49.040	110.100	11.310	26.530	9.854	12.230	10.260	11.120	10.890	10.840	78.050	56.040
22	65.920	84.320	10.670	23.500	9.740	11.640	10.110	9.985	10.310	10.220	59.070	56.330
23	107.000	62.930	10.240	18.590	9.712	10.360	10.100	10.140	10.840	9.940	47.830	53.710
24	100.700	57.640	11.500	14.230	9.583	11.520	10.020	10.600	11.830	10.390	60.110	56.650
25	192.500	62.170	12.490	10.990	9.606	11.390	9.908	10.570	12.500	12.860	51.630	110.400
26	148.200	81.320	11.640	9.756	9.755	9.970	10.250	10.510	11.210	24.650	45.320	145.500
27	101.800	81.170	10.670	9.987	9.848	9.983	10.860	10.240	10.510	19.980	38.950	124.000
28	84.170	99.810	10.190	9.508	9.923	9.776	10.420	10.230	10.640	38.240	33.120	132.900
29	171.000		9.760	9.875	10.410	10.420	9.775	10.600	11.330	33.620	28.660	113.100
30	185.700		9.352	9.998	10.710	11.860	10.290	10.810	19.270	34.730	24.840	98.970
31	168.300		10.040		10.410		9.976	9.754		48.710		104.000
Average	71.110	91.860	26.920	12.890	10.110	10.560	12.090	10.770	10.680	24.460	38.070	52.070
Lowest	24.110	44.540	9.352	8.842	9.227	9.263	9.775	9.745	9.302	9.940	14.400	13.830
Highest	192.500	156.400	93.980	26.530	13.160	12.230	22.730	13.650	19.270	61.790	78.050	145.500
Peak flow	243.30	201.70	96.24	27.48	16.22	13.79	29.62	15.32	25.43	64.76	85.62	171.30
Day of peak	29	7	1	21	15	22	5	20	25	6	21	26
Monthly total (million cu m)	190.50	222.20	72.11	33.40	27.08	27.37	32.39	28.85	27.69	65.52	98.68	139.50
Runoff (mm)	187	218	71	33	27	27	32	28	27	64	97	137
Rainfall (mm)	276	252	46	66	39	94	44	68	89	159	119	223

Statistics of monthly data for previous record (Oct 1937 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	51.840	44.560	33.610	24.680	17.450	13.810	13.060	17.320	23.560	33.700	46.860	52.150
	Low	13.460	7.858	8.128	7.841	4.273	3.742	3.113	3.288	3.052	4.216	11.580	18.610
	(year)	1964	1963	1943	1938	1938	1961	1949	1955	1949	1947	1937	1963
	High	109.300	106.700	103.700	61.030	41.940	31.240	40.270	59.400	69.470	92.470	103.000	105.200
	(year)	1948	1946	1947	1970	1969	1972	1957	1957	1950	1967	1960	1965
Runoff	Avg	136	107	88	63	46	35	34	46	60	89	119	137
	Low	35	19	21	20	11	10	8	9	8	11	29	49
	High	287	253	273	155	110	79	108	156	177	243	262	277
Rainfall	Avg	151	108	105	84	92	82	94	109	120	140	158	157
	Low	41	14	33	10	30	13	20	9	13	25	15	36
	High	338	241	251	182	197	168	244	211	306	317	300	314

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	30.610		30.990		99
Lowest yearly mean			20.460	1964	
Highest yearly mean			44.600	1954	
Lowest monthly mean	10.110	May	3.052	Sep 1949	
Highest monthly mean	91.860	Feb	109.300	Jan 1948	
Lowest daily mean	8.842	11 Apr	1.926	30 Jul 1949	
Highest daily mean	192.500	25 Jan	521.000	14 Dec 1964	
Peak	243.300	29 Jan	665.400	14 Dec 1964	
10% exceedance	78.660		70.720		111
50% exceedance	12.650		19.520		65
95% exceedance	9.696		5.086		191
Annual total (million cu m)	965.30		978.00		99
Annual runoff (mm)	947		959		99
Annual rainfall (mm)	1475		1400		105
[1941-70 rainfall average (mm)			1395]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Asymmetrical compound Crump profile weir, checked by current meter. Drowns at flows above 200 cumecs. Low flows maintained by releases from major river regulating res. (Celyn and Brenig). Data prior to February 1970 is poorer quality - based on d/s Erbistock (67002, area: 1040.0 sq. km.) flow record. D/s flood attenuation is notable. Geology is 75% shales, slates, mudstones and palaeozoic grits; 25% extrusive igneous and Carboniferous rocks. 80% grazed open moorland, 12% forestry, remainder arable, urban negligible.

068001 Weaver at Ashbrook 1990

Measuring authority: NRA-NW
First year: 1937
Grid reference: 33 (SJ) 670 633
Level stn. (m OD): 16.30
Catchment area (sq km): 622.0
Max alt. (m OD): 222

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7.716	24.430	31.120	2.612	2.227	1.451	2.157	1.122	1.369	3.380	13.840	2.799
2	13.950	20.890	16.450	2.693	2.177	1.503	1.851	1.035	1.286	2.346	5.905	2.682
3	17.460	17.010	11.500	2.985	2.122	1.485	1.662	0.994	1.433	3.834	3.867	2.613
4	11.000	13.770	9.122	2.748	2.057	1.426	2.247	0.953	1.317	2.419	2.932	2.532
5	8.418	11.200	8.091	2.539	2.022	1.444	2.170	0.920	1.365	2.672	2.502	2.435
6	10.690	9.691	6.978	2.506	2.007	1.536	1.848	0.878	1.376	2.287	2.189	2.356
7	12.170	31.540	6.037	2.362	2.126	1.605	2.672	0.887	2.101	1.846	2.089	3.473
8	10.670	38.950	5.834	2.295	2.306	2.400	2.071	0.922	1.453	1.650	2.025	8.140
9	8.522	22.690	5.459	2.297	2.729	2.306	1.753	0.919	1.284	1.539	1.971	14.060
10	7.422	17.010	4.829	2.332	2.525	1.834	1.669	0.919	1.293	1.535	2.046	16.430
11	6.404	14.420	4.492	2.309	2.292	1.647	1.609	0.909	1.293	1.478	2.012	18.560
12	5.741	15.800	4.258	2.435	2.098	1.567	1.576	0.916	1.306	1.398	3.020	13.950
13	5.372	12.180	5.181	2.297	2.014	1.505	1.601	0.939	1.257	1.381	2.824	8.889
14	5.251	11.000	4.762	2.525	1.938	1.488	1.547	0.991	1.225	1.337	4.931	7.049
15	5.950	13.780	4.231	2.889	3.372	1.309	1.569	1.079	1.164	1.725	5.046	6.292
16	5.377	10.940	4.022	2.519	3.144	1.346	1.580	0.913	1.150	1.731	4.666	5.293
17	4.608	9.332	3.840	2.644	2.363	1.374	1.586	0.942	1.193	1.561	15.620	4.645
18	3.887	8.748	3.579	2.916	2.039	1.757	1.563	1.111	1.292	1.744	11.240	4.480
19	3.704	7.918	3.468	5.317	1.931	1.735	1.498	4.594	1.803	1.878	8.480	3.994
20	3.503	7.384	3.497	5.620	1.853	1.709	1.417	3.352	1.462	1.676	16.570	7.558
21	3.448	7.946	3.315	3.807	1.814	2.684	1.336	1.965	1.544	1.509	12.580	9.284
22	3.774	7.725	3.122	3.167	1.741	3.400	1.313	1.552	1.394	1.459	8.002	8.446
23	20.390	6.657	2.910	2.867	1.670	2.791	1.315	1.412	2.171	1.476	5.991	6.984
24	19.160	6.245	3.887	2.650	1.595	2.424	1.256	1.370	10.780	1.959	5.855	6.613
25	31.600	6.640	3.354	2.537	1.559	1.950	1.241	1.199	4.817	2.806	5.454	17.640
26	26.440	11.240	2.992	2.574	1.525	1.758	1.182	1.179	2.575	5.623	4.558	21.660
27	32.620	17.520	2.875	2.470	1.449	1.693	1.237	1.128	1.873	3.502	3.631	17.000
28	59.520	21.860	2.873	2.355	1.409	1.681	1.270	1.140	1.586	6.306	3.480	20.250
29	42.760		2.684	2.269	1.561	1.593	1.273	2.095	1.858	4.368	3.225	20.400
30	31.550		2.587	2.273	1.719	1.962	1.538	2.045	6.025	3.284	3.023	25.380
31	32.020		2.637		1.530		1.228	1.519		9.914		24.920
Average	14.870	14.450	5.806	2.793	2.029	1.812	1.608	1.352	2.068	2.633	5.652	10.220
Lowest	3.448	6.245	2.587	2.269	1.409	1.309	1.182	0.878	1.150	1.337	1.971	2.356
Highest	59.520	38.950	31.120	5.620	3.372	3.400	2.672	4.594	10.780	9.914	16.570	25.380
Peak flow	64.08	41.70	34.37	6.81	5.07	4.82	3.26	8.07	15.76	22.11	21.85	29.70
Day of peak	28	8	1	20	15	21	7	19	24	31	1	30
Monthly total (million cu m)	39.84	34.95	15.55	7.24	5.44	4.70	4.31	3.62	5.36	7.05	14.65	27.37
Runoff (mm)	64	56	25	12	9	8	7	6	9	11	24	44
Rainfall (mm)	107	82	16	40	28	66	26	49	80	79	56	74

Statistics of monthly data for previous record (Oct 1937 to Dec 1989—incomplete or missing months total 1.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	10.350	9.104	6.774	5.019	3.782	2.795	2.768	3.024	3.245	4.482	7.657	9.428
	Low	1.966	2.376	2.183	1.491	0.904	1.125	0.737	0.641	0.918	1.184	1.302	2.430
	(year)	1964	1965	1938	1938	1946	1962	1976	1976	1964	1947	1942	1947
	High	21.950	19.860	18.580	11.760	22.720	6.996	12.750	8.405	16.990	15.970	22.540	22.250
	(year)	1939	1980	1947	1986	1969	1954	1968	1971	1957	1954	1954	1965
Runoff:	Avg	45	36	29	21	16	12	12	13	14	19	32	41
	Low	8	9	9	6	4	5	3	3	4	5	5	10
	High	95	80	80	49	98	29	55	36	71	69	94	98
Rainfall:	Avg	67	49	52	49	59	59	68	72	65	69	76	69
	Low	18	2	18	2	18	13	16	6	5	15	13	10
	High	145	145	127	98	194	142	168	175	169	137	170	140

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	5.393		5.688		95
Lowest yearly mean			2.752	1964	
Highest yearly mean			9.209	1954	
Lowest monthly mean	1.352	Aug	0.641	Aug 1976	
Highest monthly mean	14.870	Jan	22.720	May 1969	
Lowest daily mean	0.878	6 Aug	0.394	17 Aug 1976	
Highest daily mean	59.520	28 Jan	84.950	9 Feb 1946	
Peak	64.080	28 Jan	212.400	8 Feb 1946	
10% exceedance	13.910		12.480		111
50% exceedance	2.527		3.250		78
95% exceedance	1.129		1.133		100
Annual total (million cu m)	170.10		179.50		95
Annual runoff (mm)	273		289		95
Annual rainfall (mm)	703		754		93
[1941-70 rainfall average (mm)			765]		

Factors affecting flow regime

- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Augmentation from effluent returns.

Station and catchment description

Natural river section. Accuracy of early ratings not known and gaugings lost. However, calibration came under suspicion in 1972 and previous records, particularly low flows, deemed to be of little value. Low flow rating then changed several times before station moved 400m downstream and shallow V bed control constructed in August 1978. High flow rating (above 40 cumecs) has yet to be defined. Flat catchment includes western half of Crewe. Post glacial deposits over (mostly) Keuper Marl.

072004 Lune at Caton — 1990

Measuring authority: NRA-NW
First year: 1959
Grid reference 34 (SD) 529 653
Level stn (m OD) 10 70
Catchment area (sq km): 983.0
Max alt. (m OD) 736

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	15 530	76.300	58 550	8 310	7 734	4 488	27.260	3.203	11 270	11.770	42 370	10 240
2	38.060	58 250	47 020	8.471	6 899	4.524	18.780	3 056	6 337	8.306	28.620	9 622
3	34 440	46.430	58 350	9 100	6 275	4.361	12 000	2 904	6 090	70 210	21 860	9 159
4	21.660	246 600	99.160	8.709	5 907	4 137	87 990	2 792	5.583	50 260	18 030	8 590
5	22 600	91.660	64 990	8 569	5.549	4 402	98.200	2 830	4 625	219 100	15 450	8 091
6	55 910	55 440	40 050	15.530	5.287	6 067	27.080	2 535	15 400	219.900	13.670	7 858
7	76 450	154 400	34.420	10 530	5.567	9 046	53.050	2.784	16 530	65 760	12 440	38 700
8	59 400	96 100	29.480	8.282	7 003	18 570	58.160	2 694	8.212	32 730	11 380	29 910
9	42.700	60.310	39 530	7 524	8.400	11 310	25 670	2.795	6 045	55.030	10 480	38 780
10	120 300	55 720	69.910	7.828	23 290	7.561	17.890	2 624	4.667	78.130	10.260	51.770
11	191.200	81 820	35 810	8 656	18 680	6.226	14 090	2 375	3.887	168 200	17.550	83.540
12	91.530	82 890	26 630	8.394	11.810	5 432	12.490	2 350	3 454	63.470	21 120	50 470
13	49.930	123.000	39.100	8 706	9.106	4 809	10 110	2.363	3 226	36 300	30 370	25 800
14	84 160	92 200	28.630	10.760	7 818	4 449	8.545	2 615	3.236	26.620	36 940	19 670
15	135 800	58 190	22.310	18.690	15 180	3.804	8 532	2 736	3 117	20.170	35.450	16 370
16	142.600	40 430	24.770	17.630	52 170	3.503	10 810	7 685	3.042	23.820	192 000	18 480
17	71.520	140 400	18.950	24.980	26.510	3 369	7 663	7.284	3 241	19.010	91.130	17.010
18	43.060	69 460	15.970	28.310	16 690	3 291	6.154	7.179	18 090	19.750	78.890	14 140
19	132.500	471.800	15 880	45.150	12 640	3.454	5 642	17.990	52 840	18 060	72.970	12.780
20	54 080	248 300	13 670	23 190	10 440	3 973	5.113	11 270	45.160	14 720	42.950	109 200
21	60 680	96.750	16.660	17 020	9.169	5 002	4.860	6.287	29 870	12 620	30.380	63 040
22	78 870	57.800	13 740	13.500	8 101	5.133	4 549	5 047	13.940	10 830	23.770	211 800
23	192 700	42 810	12.160	11.310	7.303	4 214	4.237	4 360	10.560	9 745	20.160	80 880
24	76 420	147 300	15.130	9.782	6.663	5.444	4 078	6.563	8.543	9 512	17 560	58 050
25	230 600	137.100	15.540	8.762	6.105	10 070	3 696	5.994	8.366	12 540	17.330	147.100
26	82.880	176 000	12.570	26 120	5.735	5.753	3 573	3.919	7 113	30 710	17.640	259 400
27	73 360	103 000	11 070	15 580	5.397	4 900	3 534	3 052	5 962	22 550	15 400	82 620
28	72 900	80 690	10 820	10 840	5 191	5.716	3 630	2 894	5.480	115 700	13 240	152 500
29	189 300		9.990	9 499	4 973	4 704	3.508	2.956	6 185	89 410	11.920	73.770
30	115 300		9 622	8.703	4 934	15 310	3 749	3.394	19 570	121 500	11 060	45 440
31	96 510		8 942		4 719		3 753	10 180		81 640		96.920
Average	88.800	114 000	29 660	13.950	10 690	6 101	18 010	4 733	11 320	56 070	32 750	59.730
Lowest	15 530	40.430	8 942	7.524	4.719	3.291	3.508	2 350	3 042	8.306	10 260	7 858
Highest	230 600	471 800	99.160	45 150	52 170	18.570	98.200	17.990	52 840	219.900	192 000	259 400
Peak flow	395 40	873 60	134 40	61.17	88.50	26 82	313 90	30.14	123 40	420 20	361 70	451 80
Day of peak	25	19	4	18	16	8	4	19	19	6	16	26
Monthly total (million cu m)	237 90	275 70	79.44	36 15	28.62	15.81	48 25	12.68	29.34	150 20	84 88	160 00
Runoff (mm)	242	280	81	37	29	16	49	13	30	153	86	163
Rainfall (mm)	279	309	70	67	64	92	82	83	91	216	85	705

Statistics of monthly data for previous record (Jan 1959 to Dec 1989—incomplete or missing months total 4.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	52 850	37 300	36.730	28 260	18 430	15 350	18 960	25 870	33 310	44 770	50 960	55 740
	Low	6 622	3.842	11 820	4 203	2.565	3.385	1 882	2 167	2 790	4 314	24 640	18 730
	(year)	1963	1963	1975	1974	1974	1975	1984	1976	1959	1972	1985	1971
	High	86 420	76 630	113 800	67.970	40 700	49 190	42.800	71 330	67 010	134 400	97.220	108 900
	(year)	1983	1966	1981	1970	1986	1972	1988	1985	1985	1967	1963	1986
Runoff	Avg	144	93	100	75	50	40	52	70	88	122	134	152
	Low	18	9	32	11	7	9	5	6	7	12	65	51
	High	235	189	310	179	111	130	117	194	177	366	256	297
Rainfall	Avg	148	92	111	93	90	91	115	130	139	157	149	163
	Low	20	9	48	5	21	22	29	24	26	54	72	55
	High	263	217	246	193	178	169	245	270	262	402	277	333

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	36 750		34 890		105
Lowest yearly mean			24.700	1976	
Highest yearly mean			46 500	1967	
Lowest monthly mean	4.733	Aug	1 882	Jul 1984	
Highest monthly mean	114 000	Feb	134 400	Oct 1967	
Lowest daily mean	2.350	12 Aug	1 166	25 Aug 1984	
Highest daily mean	471 800	19 Feb	718 300	23 Mar 1968	
Peak	873 600	19 Feb	854 000	2 Jan 1982	
10% exceedance	93.890		84 450		111
50% exceedance	15.140		17 380		87
95% exceedance	3 092		3 082		100
Annual total (million cu m)	1159 00		1101.00		105
Annual runoff (mm)	1179		1120		105
Annual rainfall (mm)	1643		1478		111
[1941-70 rainfall average (mm)			1525]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from surface water and/or groundwater.

Station and catchment description

Basin type compound broad-crested weir operated after 10/6/77 as full-range station. Previously used for low/medium flows; high flows from Halton 3km downstream. High flows inundate wide floodplain. Transfers to river Wyre under Lancs. Conjunctive Use Scheme. Major abstractions for PWS. Headwaters rise from Shap Fell and the Pennines. Mixed geology: Carboniferous Limestone, Silurian shales, Millstone Grit and Coal Measures, substantial Drift cover. Agriculture in valleys; grassland rising to peat moss in highest areas.

073010 Leven at Newby Bridge 1990

Measuring authority: NRA-NW
First year: 1939
Grid reference: 34 (SD) 367 863
Level stn. (m OD): 37 30
Catchment area (sq km): 247.0
Max alt. (m OD): 873

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	10 390	36.860	38.380	4.638	3 786	1.751	8 863	2.231	4.981	4 025	25.210	4 899
2	9.745	33.630	31.510	4 583	3.186	1.716	10 940	2 058	4 495	9.174	22.140	4 047
3	9 538	30.270	27 430	4 581	2 678	1.749	10 500	1 781	4 175	28 630	18 690	3 674
4	9.233	33.680	28.570	4.159	2 404	2.118	15 060	1 383	3.575	30.240	15 540	3 410
5	9 817	37 290	27 460	4.587	2 122	3 329	28.090	1.354	3.486	40 300	12 980	3 051
6	12 020	34 490	25 130	7.486	2 025	6 056	26 930	1 094	6 005	51 510	10 970	2 503
7	15.110	35.260	22 010	8 218	2 119	8 825	24.100	1 339	9 137	50 850	9.331	5 387
8	18.380	37.870	20.140	7 480	2.752	11.220	21 690	1 134	8 400	41.630	7 856	5 446
9	18.090	34 560	20.580	6.594	3 608	11.300	19 270	1.117	7 088	35 980	6.718	4 699
10	19 350	32.300	22 900	6.449	4 543	9 810	16 500	1.000	5.750	32 100	5 963	4 931
11	25.920	32.340	22 520	6.310	4.597	8 002	13 760	1 021	4 512	30.970	6 203	5 949
12	27.440	34 740	20 020	5.848	3 791	6 491	11 810	1.041	3.502	28 910	6 557	8 233
13	24.470	35 020	18.410	5 817	3.005	5 323	9.775	1.042	2.637	25 080	9.028	8 034
14	24.430	35 980	16 960	6.225	2.877	4.113	7 809	1 101	2 431	21.660	13 440	7 391
15	34.460	33 250	15.890	7.227	4 036	3.350	6 793	1.406	2 203	19 940	15 570	6 553
16	39.260	27 490	15 430	7.799	7.313	2.859	5 833	4.353	2.006	18 640	25 840	5 851
17	37.060	27.760	13.860	8 396	8.889	2.613	5 037	8 674	2.135	12 740	37.920	5 365
18	31.750	28 690	11 980	9.133	8 421	2 468	3 962	10.320	3 003	11.360	36 420	4.900
19	30.690	46 020	10 920	12.540	7.427	2.818	3 209	10 320	9 193	9.658	33.060	4 319
20	28.320	57 720	9.355	13.180	6.322	3 313	2 583	9.563	11.870	8 059	29 570	8 037
21	28.370	51 340	9 133	11.820	5.363	4.275	2 553	8.068	15 640	6 920	25 720	11 180
22	34.950	43.370	8 417	10 200	4.208	4 280	2 194	6 716	14 620	5.727	21.810	26 250
23	45.390	36 470	7 699	8.642	3 458	3.978	2 068	5.752	12 870	4.753	18 410	38.430
24	43.890	37 360	8.534	7.350	2 992	4.578	1 837	4 742	11 060	3 882	15 530	39 630
25	50.640	40.200	8 625	5.990	2.520	5 587	1 640	3.628	8 997	3.714	12 900	42.900
26	51.430	46 080	7 944	6 650	2 275	6 047	1 567	2 950	7 278	5.035	11 040	58 940
27	45.410	45 600	7 155	6 697	2 238	5.551	1 446	2.637	5 617	5 656	9 022	60 200
28	39.000	43 040	6 775	5.811	1 971	5 257	1 532	2.689	4 637	10 990	7 735	56.110
29	37 850		6.197	5.225	2 002	4.981	1.493	2 874	4.484	18 100	6.757	51 800
30	41 350		5.911	4 541	2 039	6.756	2 228	2 671	4 368	23.250	5 887	42 030
31	39.620		5 410		1.872		2 390	4 251		26 880		39 790
Average	28.820	37 450	16.170	7 139	3.769	5 017	8.821	3.558	6 338	20 210	16 130	18.510
Lowest	9.233	27 490	5 410	4 159	1.872	1.716	1 446	1 000	2 006	3.714	5.887	2 503
Highest	51.430	57.720	38.380	13.180	8.889	11 300	28.090	10 320	15.640	51.510	37.920	60 200
Peak flow	54 88	59.38	41.61	14 66	9 06	13 07	28.90	10.77	16 38	55.07	40 44	65.04
Day of peak	25	20	1	20	17	9	5	19	21	6	17	26
Monthly total (million cu m)	77.19	90 61	43.31	18.50	10 09	13 00	23 63	9 53	16 43	54.12	41 80	49 59
Runoff (mm)	313	367	175	75	41	53	96	39	67	219	169	201
Rainfall (mm)	399	410	114	113	79	158	131	119	134	333	135	311

Statistics of monthly data for previous record (Jan 1939 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	19.890	16 610	13 740	11.210	7 559	6 353	7.374	10 600	14 400	17 460	20.260	21 100
	Low	1.935	0 974	3.699	1 796	0.641	0.545	0 774	0 652	0.560	1 438	6 873	8 207
	(year)	1963	1963	1962	1974	1980	1978	1941	1984	1959	1972	1983	1963
	High	38 020	31 030	36 040	21 640	18 680	18 730	16 990	31 070	33 930	50 170	36.450	40 110
	(year)	1975	1945	1989	1949	1986	1972	1953	1985	1946	1967	1986	1954
Runoff:	Avg.	216	164	149	118	82	67	80	115	151	189	213	229
	Low	21	10	40	19	7	6	8	7	6	16	72	89
	High	412	304	391	227	203	197	184	337	356	544	383	435
Rainfall:	Avg.	229	151	166	119	117	124	148	185	216	225	234	238
	Low	26	7	32	12	22	17	32	7	29	30	17	90
	High	439	339	398	243	241	269	309	428	427	557	428	450

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	14 200		13 870		102
Lowest yearly mean			9 234	1973	
Highest yearly mean	[illegible]		21.840	1954	
Lowest monthly mean	3 558	Aug	0.545	Jun 1978	
Highest monthly mean	37 450	Feb	50 170	Oct 1967	
Lowest daily mean	1.000	10 Aug	0 108	7 Oct 1972	
Highest daily mean	60 200	27 Dec	115 900	2 Dec 1954	
Peak	65 040	26 Dec	135.800	2 Dec 1954	
10% exceedance	36 910		30 770		120
50% exceedance	8 040		10 160		79
95% exceedance	1 754		1 177		149
Annual total (million cu m)	447 80		437.70		102
Annual runoff (mm)	1813		1772		102
Annual rainfall (mm)	2436		2152		113
[1941-70 rainfall average (mm)			2215]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Abstraction for public water supplies
- Augmentation from effluent returns.

Station and catchment description

Level record since 1939 from four different sites at Newby Bridge. All flow records from 1939 to 1974 combined into a single sequence. Since 5/5/71 compound Crump profile weir - increased sensitivity at low flows. Full-range. Just d/s of Lake Windermere - highly regulated, compensation flow. Major abstractions for PWS, sewage effluent from Ambleside. Predominantly impervious, Borrowdale Volcanics in north and Silurian slate in south. Boulder Clay along river valleys. Mainly grassland, very wooded in lower reaches

076007 Eden at Sheepmount 1990

Measuring authority: NRA-NW
First year: 1967
Grid reference: 35 (NY) 390 571
Level stn (m OD): 7.00
Catchment area (sq km): 2286.5
Max alt (m OD): 950

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	33 820	199 800	125 900	20 470	17 150	12 940	38 070	10 650	12 760	17 060	72 370	22 180
2	38 460	172 100	98 040	20 300	16 260	12 780	28 910	10 280	12 940	22 970	53 550	20 560
3	46 880	134 800	103 100	21 290	15 580	12 610	22 560	9 934	14 050	73 560	42 820	19 580
4	38 940	402 100	126 100	20 070	15 150	13 030	45 810	9 817	13 160	46 530	35 350	18 610
5	38 340	314 300	89 740	19 390	14 800	14 100	76 810	9 615	11 760	81 480	30 150	17 870
6	57 290	161 600	74 060	23 430	14 530	16 270	38 750	9 674	14 290	206 700	26 450	18 000
7	64 720	295 200	66 370	25 030	15 040	19 980	38 290	9 863	18 250	102 100	23 810	57 810
8	75 710	269 500	93 820	21 400	15 340	29 310	44 100	9 953	16 360	57 970	21 810	67 560
9	55 750	135 900	108 300	20 000	16 410	22 950	32 570	11 070	13 550	52 010	20 380	106 200
10	90 520	114 500	107 100	19 730	20 740	18 980	27 900	10 350	12 460	50 770	19 590	89 490
11	144 900	134 100	69 090	19 180	24 670	16 960	22 360	9 969	11 700	114 600	21 750	122 800
12	97 110	162 800	55 160	18 720	20 180	15 790	20 250	9 640	11 150	65 550	22 420	115 800
13	70 650	170 800	50 100	19 970	17 430	14 980	18 560	9 773	10 890	43 020	23 380	57 670
14	64 600	159 800	50 980	20 690	16 240	14 460	17 040	9 567	10 650	33 220	37 330	43 240
15	90 750	111 400	44 560	25 440	22 050	13 930	16 980	9 920	10 410	33 040	46 620	36 290
16	139 700	83 890	53 950	28 030	69 140	13 500	17 590	15 420	10 240	32 450	98 920	38 250
17	123 800	158 000	46 730	32 110	61 230	13 060	16 090	16 250	10 360	28 280	100 700	37 690
18	75 690	147 500	39 540	32 760	29 820	12 840	14 600	14 630	15 540	24 810	80 430	30 860
19	179 700	386 700	37 580	37 710	22 650	12 810	13 670	15 030	38 440	24 080	73 740	27 430
20	98 430	528 600	34 350	32 960	19 730	12 610	13 070	16 150	33 970	25 940	68 000	80 340
21	92 630	219 600	33 150	29 300	18 190	13 300	12 520	14 480	34 900	23 940	51 360	67 660
22	165 000	138 200	31 300	26 320	17 130	18 470	12 080	12 970	20 560	20 300	42 820	142 700
23	320 800	105 400	29 040	23 390	16 220	26 190	11 570	12 470	17 740	18 100	37 360	143 800
24	154 900	237 000	30 040	21 410	15 250	17 700	11 280	11 990	23 220	17 290	32 770	112 700
25	333 400	220 300	30 070	20 330	14 510	17 500	10 970	13 440	26 490	17 460	40 580	232 300
26	184 000	353 200	27 070	30 090	14 020	15 370	10 690	12 120	18 120	23 130	53 560	318 100
27	127 400	214 000	25 280	25 700	13 690	14 490	10 600	11 320	15 110	25 100	40 350	194 100
28	105 900	167 800	24 070	21 330	13 200	14 080	10 880	10 790	14 100	84 740	31 510	314 700
29	193 300		22 480	19 500	13 020	13 730	10 770	10 870	13 580	100 600	27 020	192 100
30	246 000		21 480	18 230	13 260	23 290	11 020	11 050	14 860	124 700	24 370	116 100
31	238 700		20 880		12 930		11 060	11 240		133 500		197 500
Average	122 200	210 700	57 080	23 810	20 180	16 270	22 170	11 620	16 720	55 650	43 380	98 710
Lowest	33 820	83 890	20 880	18 230	12 930	12 610	10 600	9 567	10 240	17 060	19 590	17 870
Highest	333 400	528 600	126 100	37 710	69 140	29 310	76 810	16 250	38 440	206 700	100 700	318 100
Peak flow	485.20	705 40	160 00	41 65	103.00	46 04	117.80	21 04	63.58	310 20	191 60	456 70
Day of peak	25	4	8	19	16	30	5	16	20	6	16	28
Monthly total (million cu m)	327.30	509 70	152.90	61.71	54 05	42 16	59.39	31.13	43 34	149.00	112.40	264.40
Runoff (mm)	143	223	67	27	24	18	26	14	19	65	49	116
Rainfall (mm)	229	279	53	56	57	89	59	62	71	164	62	199

Statistics of monthly data for previous record (Oct 1967 to Dec 1989—incomplete or missing months total 3.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg	85 290	62 080	58 530	41 160	28 170	22 660	23 310	26 860	39 140	64 110	73 360	75 950
	Low	39 880	26 440	24 360	13 070	11 050	10 420	8 377	7 023	9 216	7 961	30 430	32 490
	(year)	1985	1986	1975	1974	1974	1973	1984	1976	1972	1972	1973	1971
	High	151 200	107 600	119 700	63 960	69 120	50 380	59 240	92 380	105 400	225 000	126 400	143 100
	(year)	1975	1988	1968	1970	1983	1972	1988	1985	1985	1967	1984	1986
Runoff	Avg	100	66	69	47	33	26	27	31	44	75	83	89
	Low	47	28	29	15	13	12	10	8	10	9	34	38
	High	177	118	140	73	81	57	69	108	120	264	143	168
Rainfall	Avg	128	74	102	64	71	72	88	95	112	130	124	125
	Low	50	13	43	8	25	27	22	19	25	31	54	43
	High	232	159	179	111	133	126	221	211	231	307	208	371

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	57 310		50 030		115
Lowest yearly mean			28.190	1973	
Highest yearly mean			60.790	1982	
Lowest monthly mean	11 620	Aug	7 023	Aug 1976	
Highest monthly mean	210 700	Feb	225.000	Oct 1967	
Lowest daily mean	9 567	14 Aug	5.468	7 Sep 1976	
Highest daily mean	528 600	20 Feb	772 900	23 Mar 1968	
Peak	705.400	4 Feb	1357 000	24 Mar 1968	
10% exceedance	145 600		106 500		137
50% exceedance	25 090		31 540		80
95% exceedance	10 610		9 897		107
Annual total (million cu m)	1807 00		1579 00		114
Annual runoff (mm)	790		691		114
Annual rainfall (mm)	1380		1185		116
[1941-70 rainfall average (mm)			1225]		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies

Station and catchment description

Velocity-area station. Permanent cableway. Full-range. Most floods contained in immediate channel. Pre-1970 (when floodbanks constructed) bypassed via Caldew floodplain. Highly influenced by Ullswater, Haweswater and Wet Sleddale especially at low flows. Rural except for Carlisle, Penrith and Appleby. Headwaters in Carboniferous Limestone of Pennines to east, impervious Lower Palaeozoics of Lake District massif to west; moorland. Extensive Boulder Clay covered Permo-Triassic sandstone in Vale of Eden. Arable and grazing.

079006 Nith at Drumlanrig 1990

Measuring authority: SRPB
First year: 1967
Grid reference: 25 (NX) 858 994
Level stn (m OD): 52 20
Catchment area (sq km): 471.0
Max alt. (m OD): 725

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	7 609	67.860	27.870	4 649	3 956	7.461	6 994	1 888	7 411	5 978	14.510	5.995
2	8.810	43 760	29 290	10 240	3 495	5.762	6.611	1.737	7 704	109.100	11 360	5 670
3	21.690	28.400	58.320	8 149	3.319	4.523	4 981	1.728	12 300	73 800	9.522	5 612
4	13.760	113.900	47 820	5.864	3 292	9 084	11.220	1.749	7.756	41.090	8.289	5 354
5	16.430	43.160	52.270	5 419	3.174	10 240	9 083	1.768	10 420	69 900	7.424	4.971
6	25.130	102.300	67 370	5.163	2 881	48.120	5 687	1.704	71.900	143 000	6.748	5 001
7	34 090	49.180	47.910	4.708	3 283	26 480	14 010	1 635	27.760	52 160	6 205	11 830
8	18.680	49 580	66 670	4.330	3 912	19 560	13 440	1.713	12.690	25.850	5.712	6 931
9	20 440	30 410	76 460	4 237	4 995	9.836	16.160	3.172	8 866	21 130	5 366	8.875
10	51.790	40 200	66.300	7 662	4 277	7.108	9 413	2.736	7.059	22 450	5 462	7 643
11	24.290	81.520	33.500	6 845	3 548	5.850	6 878	2.111	5 881	39 640	5 457	47 050
12	20.130	48 980	21.150	5.630	3 166	4.845	7.341	2 084	5.055	27 270	5.671	19 690
13	16.880	41.740	26 660	13.700	2 821	4.199	6.877	2.510	4 529	17 890	6.948	10.290
14	40 100	37.450	21.910	10 400	2 535	3.705	5 227	3 069	4 036	11.870	9.568	8 198
15	57.280	25 160	35.010	16.400	4 285	3.448	5.766	6 183	3.725	31.990	11 280	7.527
16	64.240	19.260	17.720	21.940	9 676	3 230	4 050	29.440	3.704	26 180	37.490	7.626
17	50 640	128 800	13.370	29.650	7 374	3 032	4 046	9 809	4.088	30 210	22 390	6 905
18	72.370	69 140	11 310	25.180	4 959	3.043	3 465	5 550	25 620	40 730	33 060	5 817
19	77.260	99.240	10.360	24.300	3 895	2.948	3 081	4 615	23.360	18 100	20.940	5 969
20	35.570	42.700	8 635	13.210	3 344	2 867	2.853	4 911	19 100	13 670	14 890	20 310
21	47.520	35.840	10 080	9.674	2.967	3 208	2 702	3.552	14.140	11 040	12 280	13 580
22	82.380	21 470	8.151	8.370	2 721	5.577	2.536	3 313	11.720	9.281	9 666	102.800
23	71.600	53.130	7.185	7.892	2 789	4 455	2 377	3 313	8.719	8 090	14.270	79.900
24	32 570	100 300	9.978	6.239	2.512	6 445	2 237	5.298	8.924	7.970	13 780	65.700
25	66 030	123 400	10 050	5.568	2 245	5.343	2.106	6 405	7.941	9.233	14 480	166 700
26	43.880	92 640	7 033	7.440	2 081	4 314	1 972	4 104	6 117	17.310	12.800	141 000
27	35.110	65.290	6 272	5 740	2 001	10.830	1.979	3 614	5.298	10 500	8 876	63 260
28	26.230	43.700	6.113	5 406	1 907	6.584	2.297	4 425	4.987	59 510	7 578	109 600
29	171 800		5.886	5 434	1 974	5.830	2.256	44.730	6 244	33 520	6.988	43 010
30	122.000		5.481	4.713	2 746	5.956	2 481	11 820	8 061	28.990	6.529	24 080
31	70.520		5 119		2 280		2 096	9 889		21.790		17 280
Average	46.670	60.660	26 490	9 805	3 497	8.129	5 556	6.148	11 840	33.520	11 850	33 360
Lowest	7.609	19 260	5.119	4.237	1 907	2.867	1.972	1 635	3.704	5.978	5.366	4 971
Highest	171.800	128.800	76 460	29.650	9 676	48.120	16 160	44 730	71 900	143.000	37 490	166 700
Peak flow	293 00	295.40	149.20	44 82	13.64	100 40	21 67	100.30	138.00	200 00	71.27	359.40
Day of peak	29	17	10	17	16	6	8	29	6	2	16	25
Monthly total (million cu m)	125 00	146 80	70 96	25 41	9 37	21 07	14 88	16 47	30 68	89 79	30.72	89 35
Runoff (mm)	265	312	151	54	20	45	32	35	65	191	65	190
Rainfall (mm)	335	382	154	87	69	126	73	131	113	231	69	216

Statistics of monthly data for previous record (Jun 1967 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg.	28.510	20.120	19.110	9 491	7 771	5.193	5 558	8 455	14.360	23 100	25 870	25 300
	Low	9 037	4 288	4.427	2.457	1 390	1.489	0 868	0 841	1.260	2 744	5.268	12.770
	(year)	1985	1986	1969	1974	1980	1984	1984	1984	1972	1972	1983	1971
	High	61.220	38 900	34 800	24.190	27.570	14.660	15.780	38 280	39 000	39.200	49.350	55 190
	(year)	1974	1984	1989	1972	1986	1972	1988	1985	1985	1967	1982	1986
Runoff:	Avg.	162	105	109	52	44	29	32	48	79	131	142	144
	Low	51	22	25	14	8	8	5	5	7	16	29	73
	High	348	207	198	133	157	81	90	218	215	223	272	314
Rainfall:	Avg.	182	109	136	72	95	83	96	112	151	180	170	165
	Low	67	10	34	11	19	30	41	23	20	66	35	69
	High	398	195	239	175	230	163	211	302	247	301	285	345

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	21 260		16.060		132
Lowest yearly mean			10 720	1971	
Highest yearly mean			21 700	1982	
Lowest monthly mean	3 497	May	0.841	Aug 1984	
Highest monthly mean	60 660	Feb	61 220	Jan 1974	
Lowest daily mean	1 635	7 Aug	0 606	26 Aug 1984	
Highest daily mean	171 800	29 Jan	231 700	19 Dec 1982	
Peak	359 400	25 Dec	538.400	18 Oct 1982	
10% exceedance	60 600		41 340		147
50% exceedance	8 811		8 099		109
95% exceedance	2 231		1.319		169
Annual total (million cu m)	670 50		506 80		132
Annual runoff (mm)	1423		1076		132
Annual rainfall (mm)	1986		1551		128
(1941-70 rainfall average (mm)			1579)		

Factors affecting flow regime

- Reservoir(s) in catchment
- Abstraction for public water supplies

Station and catchment description

Velocity-area station on long straight reach at particularly well confined site. Cableway. Gravel and rock bed. Natural channel control. Sensibly natural flow regime. Afton Reservoir has small influence.

084005 Clyde at Blairston 1990

Measuring authority: CRPB
First year: 1958

Grid reference: 26 (NS) 704 579
Level stn (m OD) 17 60

Catchment area (sq km): 1704.2
Max alt (m OD): 732

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	27.720	166 900	99 480	22 950	14 780	13 050	44 600	8.106	15 110	25.960	47.080	22 550
2	29 050	127 400	80.990	39 650	13.870	15 800	24.130	7.843	15 330	99.530	36 070	21 320
3	57.780	92 010	98 650	32 120	12 910	12.160	44 640	7.653	20 490	208.000	30 050	20 640
4	43.230	208 300	127.700	24 660	12.320	11.250	54.700	7 523	19.090	100.300	25.840	19.500
5	37 730	143 500	196 800	21 560	11 960	13 110	30 680	7.438	15 460	175 400	23 590	18 270
6	59.380	195 900	218 600	20 500	11 860	32.730	33 560	7 593	43 000	459 800	26 650	24 350
7	60.950	130 500	162.200	19 340	13 660	55.060	43 470	7 604	47 630	202.900	24.740	59.360
8	46 620	130 700	185 900	17.700	17 090	35.330	42.930	7.811	22 500	87.210	18 360	35 330
9	49.800	98.140	209.800	17 120	21 570	28 790	39 360	9 279	16 950	80.270	16 700	49.750
10	139 700	88 620	244.000	23.150	21 070	26 520	30 170	9.603	14 290	68.570	16 350	41 020
11	79 210	160 300	125 000	22.540	18 480	25 480	21.640	8 315	12 760	86.670	16 470	86 330
12	62.630	140 000	87 480	20 120	14 950	18 720	19.490	9 430	11.680	68 610	17 310	80.200
13	50.400	127 600	74.930	22 960	13 110	13 870	19.120	14 000	10 850	51 660	17 530	38 270
14	93.750	109 800	75 490	24 590	12 460	12 320	16 820	11.150	9.979	42.480	20 320	29 940
15	168.900	85 390	118 500	27 350	17 870	11.560	16 810	24 900	9 346	53 890	24 090	28 160
16	180 400	70 490	77 660	54 000	63 940	10 750	19 860	62.220	9 518	87 640	44 970	27 430
17	181.200	285 700	60 920	74 550	38.740	10.180	16 420	28 900	11 580	61 410	42 410	26 200
18	163 500	207 500	55.040	59 200	20 800	9 867	12 910	15.350	26.250	83.070	67 170	23 420
19	236.300	195 900	52 140	58 880	15 700	10.320	11 280	13 080	40 280	51 690	53 530	22.440
20	137.900	138 200	45 370	46 240	13.520	9 525	10 730	11.720	33 100	40.650	40.240	62.270
21	90 010	136 800	60 060	33 680	12 600	9 760	9.914	9 971	34 860	35.270	36 820	72.900
22	138.500	89 900	46 800	28 000	13 070	11 580	9 902	9.274	21.740	31.070	30 080	274.300
23	218.400	118 200	41.340	25.230	13 060	12.910	10.070	9.332	20 280	26.200	28.010	249 400
24	137.100	311 900	57 460	23 430	12.390	12 540	9 441	17 440	23.940	24 450	27 010	124 800
25	192 800	298 700	53.450	21 780	11 720	13 920	8 997	18 480	34.850	24.220	70 390	315 400
26	165 800	296 100	37.560	25 380	11 100	14 750	8 916	13 270	21 070	25.470	67 860	314.100
27	141.900	184 800	31 440	21 050	10.840	17.920	8 603	11 080	16 710	25 400	37.760	163 500
28	100 800	144 700	27.440	18 600	10 330	22.300	8.752	11.010	15 170	80 010	29 020	246 500
29	293 000		25 110	17.540	10 670	23.070	8 618	45 240	20 120	102.700	25.720	145 000
30	347 000		23.310	16 260	11 650	30 010	8 491	27.740	33 590	129.200	24 000	87 620
31	216.500		22.370		10 710		8 630	17 790		75 200		68.590
Average	127 400	160 100	91 060	29 340	16 410	18 170	21 090	15.170	21.580	87.580	32.870	90.290
Lowest	27 720	70 490	22 370	16 260	10.330	9.525	8.491	7 438	9.346	24 220	16 350	18 270
Highest	347.000	311 900	244 000	74 550	63 940	55 060	54.700	62.220	47 630	459.800	70 390	315.400
Peak flow	398.70	380 70	315 50	89 87	106 40	98.76	77 95	79 02	71 46	507 50	95 46	365 70
Day of peak	30	26	10	18	17	31	4	16	7	7	26	23
Monthly total (million cu m)	341.10	387 40	243.90	76.04	43.96	47 10	56 48	40 62	55 95	234 60	85 20	241 80
Runoff (mm)	200	227	143	45	26	28	33	24	33	138	50	142
Rainfall (mm)	250	254	133	68	59	102	59	104	78	194	54	172

Statistics of monthly data for previous record (Oct 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	65.230	50 510	46 420	29 840	23 050	16 870	15 710	25 210	36 730	51 020	63 160	64 510
	Low	11 920	8 854	14.810	10.430	7 994	7 491	5 041	4.536	7 630	8.243	15 870	26 080
	(year)	1963	1963	1969	1974	1980	1984	1984	1984	1972	1972	1983	1963
	High	134.300	97.290	88.940	58 700	56 230	41 190	47 620	82 370	128 400	114 600	129 600	133 400
	(year)	1975	1984	1979	1972	1986	1972	1985	1985	1985	1967	1982	1986
Runoff	Avg	103	72	73	45	36	26	25	40	56	80	96	101
	Low	19	13	23	16	13	11	8	7	12	13	24	41
	High	211	143	140	89	88	63	75	129	195	180	197	210
Rainfall	Avg.	113	73	94	64	72	71	81	101	115	122	122	117
	Low	25	16	28	9	18	17	32	24	16	33	24	38
	High	237	141	163	125	150	157	166	206	230	231	221	237

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	58 790		40 660		145
Lowest yearly mean			27.090	1973	
Highest yearly mean			53 020	1986	
Lowest monthly mean	15 170	Aug	4.536	Aug 1984	
Highest monthly mean	160 100	Feb	134 300	Jan 1975	
Lowest daily mean	7.438	5 Aug	3.366	23 Aug 1984	
Highest daily mean	459 800	6 Oct	581 700	21 Sep 1985	
Peak	507.500	7 Oct	666 400	22 Sep 1985	
10% exceedance	162 500		95 570		170
50% exceedance	27 580		23 690		116
95% exceedance	9 328		7 810		119
Annual total (million cu m)	1854 00		1283.00		145
Annual runoff (mm)	1088		753		145
Annual rainfall (mm)	1527		1145		133
(1941-70 rainfall average (mm)			1152)		

Factors affecting flow regime

Station and catchment description

Recorder moved to present position in Nov 1974 from opposite bank. Section is natural with steep grass and tree covered banks. Velocity profile slightly uneven due to upstream bend. Control - piers of redundant rail bridge, 300m d/s. Section rated by current meter to 3 4m, just below max. recorded stage. Some naturalised flows available. Very mixed geology with the older formations (Ordovician/Silurian) to the south. Hill pasture and moorland predominates but some mixed farming and urban development is found in the lower valley.

093001 Carron at New Kelso 1990

Measuring authority: HRPB
First year: 1979
Grid reference: 18 (NG) 942 429
Level stn (m OD): 5.60
Catchment area (sq km): 137.8
Max alt (m OD): 1053

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2 161	17 570	4 838	4 824	3 578	1 162	8 816	9 945	25 650	20.840	16 520	3 927
2	2.116	34.420	8 932	8 201	2 874	1 139	7 667	4 310	46 470	39 910	16.430	13.620
3	1 888	26 480	134 400	6 360	2 449	1 070	8 096	2 342	20 260	28.570	8 412	13 830
4	1.738	90 590	45 250	9 025	2 103	3 139	6 903	3 365	12 540	27 470	5 046	7.205
5	2.185	60 290	83.790	15 030	9 267	3.651	4 535	5 998	10.250	53.970	3 714	5 253
6	7 725	27 340	85 690	7 536	24 290	9 888	3 479	6 592	39 420	29.440	3.019	28 520
7	9.384	15 390	49.330	5.447	11.210	22.630	9 252	4.055	10 980	13 370	2 575	12 320
8	6.443	12 610	14 380	6 097	7.292	8 075	23.580	4 322	6 759	13 340	2.252	6.221
9	11.150	37 410	28 680	13 490	4 313	3.904	40 510	16 210	4 406	47 230	1 999	4 924
10	32 350	21.190	160 100	21.170	3 154	2 548	13 680	42 340	3 337	21.460	1 862	5 744
11	22 200	11 800	40 300	10 450	2 576	1 913	8 263	25 450	2.728	16 190	1 827	54 010
12	10 430	6 862	13 480	8 038	2 134	1 557	4 732	28 570	2 387	9.864	2 434	15 950
13	7.433	5 912	13 540	6 575	1 854	1 327	3 180	10 670	2 027	5 485	5 835	8 698
14	55.110	5.188	38 230	9 615	1.674	1 161	2 393	7.953	1 795	14 090	8 024	6.314
15	85 790	4 109	116 400	19 500	1 574	1 027	2 087	6 423	1 602	44 660	12 710	4 245
16	32 200	4.928	53 120	14.180	1.462	0.955	1 861	18 260	2 442	14 800	36 920	3 175
17	26 590	34 260	13 160	13 440	1 331	0 930	1 572	10 770	4 038	19 260	19 980	2 489
18	15 620	28 170	19 160	18 650	1 230	1.721	1 378	5 768	128 800	11 930	47.350	2 205
19	20 920	69 940	15 420	22 840	1 161	1 771	1 241	9 376	32 070	5.703	32 390	10 090
20	70 630	31 090	40 800	11 870	1 087	1 511	1 149	10 150	28.140	3 979	15 880	19 600
21	16 700	19 690	24 690	7 026	1 039	1 559	1 036	5.511	29 640	3 171	7 652	26 980
22	26 390	32 170	51 730	5.390	1 079	1 963	0 955	4 926	12 260	2 672	4 550	37 380
23	18.770	17 820	85 510	4 656	1 420	6 135	0 880	4 575	6 436	2 330	3 628	39 260
24	8.493	11 780	18.670	4 527	1 496	4 218	0 776	4 620	4 860	2 045	3 312	25 780
25	5.842	17.510	10.800	8 308	1.389	7 551	0 731	3 133	3 829	1 887	3 444	31 150
26	5.095	13 950	8.339	6 288	1 174	5.372	0 699	3 032	3 160	1 873	3 110	45 630
27	9 790	9.706	7 986	3 853	1 018	3 821	0 668	2 897	30 710	2 427	2 648	18 810
28	5 884	6.864	6.686	10 070	0 938	3 364	0 648	3 507	111 200	4 860	3 683	40 540
29	19.190		5.372	10 450	0.963	2 507	0 697	3 973	30 930	9 209	4 087	15 680
30	31.640		5 391	5 225	0 975	3 703	0 876	16 620	12 290	5 441	3 342	11 070
31	19 910		4 674		0 935		1 078	17 820		6 201		9.229
Average	19.090	24.110	38 990	9 938	3.195	3.709	5.272	9 790	21 050	15 600	9 488	17 090
Lowest	1 738	4 109	4 674	3 853	0 935	0 930	0 648	2 342	1 602	1 873	1 827	2 205
Highest	85 790	90 590	160 100	22 840	24 290	22.630	40 510	42 340	128 800	53 970	47.350	54 010
Peak flow	146 70	121 70	252 20	30 81	41 11	30 03	51 85	67 44	337.40	78 25	58 20	87.91
Day of peak	15	4	3	18	6	7	9	11	18	9	18	11
Monthly total (million cu m)	51.13	58.32	104 40	25 76	8.56	9 61	14 12	26 22	54 55	41.79	24 59	45 78
Runoff (mm)	371	423	758	187	62	70	102	190	396	303	178	332
Rainfall (mm)	481	495	768	223	82	113	119	204	318	298	198	383

Statistics of monthly data for previous record (Jan 1979 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows:	Avg	15 010	10 840	12 520	6 525	4 953	4 152	6 062	8 575	13 980	13 840	15 540	17.910
	Low	6.148	1.361	4 103	2 863	0 698	0 921	2 426	2 703	7 086	6 332	6 369	5 636
	(year)	1985	1986	1980	1980	1980	1982	1984	1984	1986	1979	1989	1989
	High	31.650	32 590	18 250	13 440	14 120	8 623	10.530	15 070	19.100	24 070	31.120	30 710
	(year)	1989	1989	1983	1984	1986	1980	1985	1985	1980	1983	1981	1983
Runoff:	Avg.	292	192	243	123	96	78	118	167	263	269	292	348
	Low	120	24	80	54	14	17	47	53	133	123	120	110
	High	615	572	355	253	274	162	205	293	359	468	585	597
Rainfall:	Avg.	315	194	274	118	113	121	155	207	309	323	325	372
	Low	94	6	95	70	36	28	89	85	150	182	114	124
	High	623	583	397	217	295	275	248	360	425	532	629	546

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	14 740		10 830		136
Lowest yearly mean			8 852	1987	
Highest yearly mean			12 770	1983	
Lowest monthly mean	3.195	May	0 698	May 1980	
Highest monthly mean	38 990	Mar	32.590	Feb 1989	
Lowest daily mean	0 648	28 Jul	0 425	27 Jun 1982	
Highest daily mean	160 100	10 Mar	201 100	31 Dec 1983	
Peak	337 400	18 Sep	337 400	5 Feb 1989	
10% exceedance	36 600		26 300		139
50% exceedance	7 137		5 479		130
95% exceedance	1 056		1 024		103
Annual total (million cu m)	464 80		341 80		136
Annual runoff (mm)	3373		2480		136
Annual rainfall (mm)	3682		2826		130
[1941-70 rainfall average (mm)			2498]		

Factors affecting flow regime

- Natural to within 10% at 95 percentile flow.

Station and catchment description

40m wide river section with floodbank on right. Any bypassing in extreme floods will be over 30m wide floodplain on left bank. Unstable gravel control requires regular calibration of low flow range. Adequately gauged to bankfull. Computed flows are 100% natural. 70% of catchment drains through Loch Dughaill with little additional surface storage. Typical mix of rough grazing and moorland. One of the wetter Highland catchments currently gauged.

201007 Burn Dennet at Burndennet Bridge 1990

Measuring authority DOEN
First year 1975
Grid reference 24 (IC) 372 047
Level stn (m OD) 2 00
Catchment area (sq km) 145 3
Max alt. (m OD) 539

Daily mean gauged discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	2.810	19 870	10 080	4 242	2 964	1 925	11 760	1 998	3 153	2 201	11 110	4 360
2	3 072	22 870	11 820	6 127	2 749	2 524	4 207	1.997	2 607	13 670	10 170	4 034
3	2 990	12 060	11 690	5 633	2 741	2 635	3 236	1 962	2 792	6 535	7.743	3 733
4	2 865	19.140	9 578	4 738	2 767	2 327	9 814	1 958	2 607	6 478	6 544	3 521
5	2 974	11 170	7 615	4 519	2 802	2 961	5 456	1 964	3 318	15 030	5 918	3 506
6	2 727	26 780	7 095	4 123	2 822	11 520	4 994	1 944	3 031	36.560	4 586	7 092
7	3 232	23.500	10 400	3 636	2 917	6 302	9 961	1 915	2 485	7.619	4 251	9 328
8	3 263	17 180	14 280	3 370	4 268	8 751	5 267	1 950	2 407	5.296	4 034	4 970
9	3 761	12 040	10 840	3 176	7.551	3 648	4 431	2.289	2.281	5 690	3.957	5 001
10	8 443	10 920	10 370	3 673	5 188	3 004	3 596	2 344	2 165	5 384	4 053	4 294
11	5 263	14 290	8 221	3 549	3 914	2 746	3.148	2 349	1 993	9 120	4 331	4 942
12	4 200	11 220	6 624	3 491	3.445	2 463	5 691	2 192	1 978	5 404	4 218	4 489
13	3 755	16 590	6 863	3 859	3 117	2.223	4.076	2 021	1 943	4 317	4 768	3 872
14	4 068	10 520	9 466	4 322	2 871	2 147	3 200	1 984	1 908	3 940	4 259	3 641
15	5 479	7 885	13 240	5 379	2 772	2 090	4 741	2 767	1 792	18 900	4.458	3 417
16	9.688	8 907	7 022	7 200	4 261	2 049	3 961	3 873	1 824	7 142	6.341	3 359
17	8 930	16 650	6 080	9 657	3 725	2 064	2 929	2 867	2 033	21 360	6 202	3 346
18	10 450	12 630	8 130	9 246	3 056	2 690	2 658	2 334	5 623	9 984	6 591	3 170
19	10 070	10 350	7 410	8 678	2 707	3 379	2 516	4 221	4.341	6 650	6 380	3 354
20	6 190	8 454	6 390	6 009	2 590	3 278	2 422	3 116	3 589	5 676	6 636	6 332
21	6 631	8 607	5 724	4 655	2 493	2 877	2 367	2 739	3 467	5 120	6 315	5 158
22	11 820	6 482	5 450	4 058	2 347	2 613	2 272	2 391	3 143	4 772	5 465	15.050
23	12 360	8 138	5 286	3 749	2 254	2 631	2 138	2 498	5 181	4 378	19 450	14 150
24	10 930	17 470	5 145	3 702	2 164	2 458	2 109	2 753	5 231	4 149	11.700	9 651
25	23 860	18 590	4 813	3 645	2 112	2 327	2 071	2 353	3 401	4 067	8.340	16 690
26	12 890	15 700	4 454	4 673	2 082	2 386	1 991	2 201	2 723	4 154	6 754	24 740
27	10 850	21 340	4 186	3 929	2 053	4 401	1 994	2 165	2 522	15 590	5.981	10 120
28	12 620	11 600	3 991	3 672	2 023	2 998	1 992	2 412	2 325	18 430	5 486	19 090
29	24 580		3 807	3 435	1 994	3 934	2 900	5 932	2 303	16 190	5 043	10 280
30	19 880		3 688	3 233	1 964	11 660	2 509	4 201	2 317	17 590	4 691	8.565
31	12 300		3 554		1 944		2 174	3 746		15.900		7 789
Average	8 482	14 320	7 526	4 779	2 989	3.634	3 954	2 627	2.883	9 913	6 526	7 453
Lowest	2 727	6 482	3 554	3 176	1 944	1 925	1 991	1 915	1 792	2 201	3 957	3 170
Highest	24 580	26 780	14 280	9.657	7 551	11 660	11 760	5 932	5 623	36 560	19 450	24 740
Peak flow	40 75	38 75	29 52	12 23	10 45	29 40	24 20	11.90	14.20	87 00	30 00	55 70
Day of peak	29	6	14	17	9	6	1	28	18	6	23	26
Monthly total (million cu m)	22 72	34 64	20 16	12 39	8 01	9 42	10 59	7 04	7 47	26 55	16.91	19 96
Runoff (mm)	156	238	139	85	55	65	73	48	51	183	116	137
Rainfall (mm)	190	219	83	91	51	134	74	76	58	246	92	143

Statistics of monthly data for previous record (Jun 1975 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean flows	Avg.	6 240	4 808	4 815	3 018	2 371	1 779	1 840	2 522	3 370	4 721	4 905	5 361
	Low	3 410	2 244	2 441	1 687	0 925	0 843	0 832	0 579	0 664	2 596	2 129	3 203
	(year)	1985	1985	1976	1980	1984	1984	1984	1976	1976	1975	1983	1989
	High	9 542	8 897	7 811	6 115	5 024	3 649	3 990	7.213	8 151	7 873	7 351	8 157
	(year)	1988	1988	1989	1989	1986	1981	1980	1985	1985	1981	1986	1980
Runoff	Avg	115	81	89	54	44	32	34	46	60	87	87	99
	Low	63	37	45	30	17	15	15	11	12	48	38	59
	High	176	153	144	109	93	65	74	133	145	145	131	150
Rainfall	Avg	129	74	112	59	69	69	87	94	108	128	108	111
	Low	54	3	63	17	16	38	18	15	13	57	40	54
	High	219	155	152	111	148	116	161	230	205	201	166	186

Summary statistics

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	6 210		3 811		163
Lowest yearly mean			2 634	1976	
Highest yearly mean			5 012	1981	
Lowest monthly mean	2 627	Aug	0 579	Aug 1976	
Highest monthly mean	14 320	Feb	9 542	Jan 1988	
Lowest daily mean	1 792	15 Sep	0 407	28 Aug 1976	
Highest daily mean	36 560	6 Oct	74 260	21 Oct 1987	
Peak	87 000	6 Oct	110 800	21 Oct 1987	
10% exceedance	12 460		8 061		155
50% exceedance	4 239		2 825		150
95% exceedance	1 997		0 863		231
Annual total (million cu m)	195 80		120 30		163
Annual runoff (mm)	1348		828		163
Annual rainfall (mm)	1457		1148		127
[1941-70 rainfall average (mm)			1156]		

Factors affecting flow regime

- Augmentation from effluent returns.

Comment

1990 data are provisional

Station and catchment description

Velocity-area station with cableway and natural control; discharge through the underlying gravels may be substantial. No water abstractions or significant returns. Geology is schist, limestone and quartzite curtailed at Burndennet Bridge by a major fault drop. Extensive sand and gravel deposits either side of the River Remainder, till and limited peat. About 70% of the catchment is upland heath rising to above 500 mOD; remainder agricultural grassland.

039001 Thames at Kingston 1990

Measuring authority: NRA-T
First year: 1883
Grid reference: 51 (TQ) 177 698
Level stn. (m OD) 4.70
Catchment area (sq km): 9948.0
Max alt. (m OD): 330

Daily mean naturalised discharges (cubic metres per second)

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	115.000	352.000	160.000	67.100	48.600	35.300	25.700	18.900	17.400	43.800	28.500	20.300
2	106.000	356.000	145.000	71.200	44.400	32.500	27.100	18.900	18.900	18.700	21.700	22.000
3	102.000	397.000	129.000	73.300	45.900	31.600	27.400	18.400	18.400	22.600	24.500	23.800
4	91.500	427.000	115.000	70.300	42.400	33.200	27.000	17.400	18.900	22.600	21.400	21.600
5	86.900	387.000	122.000	66.400	44.900	32.800	28.400	16.300	20.000	23.100	23.700	19.500
6	94.900	358.000	116.000	62.700	43.900	32.700	31.200	15.300	16.300	19.300	23.400	24.000
7	182.000	386.000	112.000	63.200	41.800	33.200	29.700	16.300	14.200	19.900	21.300	21.700
8	159.000	421.000	108.000	61.200	43.200	32.300	25.500	17.400	15.300	19.500	21.100	23.000
9	134.000	395.000	107.000	60.300	39.700	32.800	25.900	16.800	14.700	20.000	19.600	29.900
10	118.000	369.000	106.000	57.900	43.900	31.400	27.500	16.800	12.100	16.700	23.700	28.900
11	109.000	361.000	99.500	59.800	46.500	32.200	25.200	16.800	16.800	21.900	22.700	38.600
12	95.400	367.000	90.800	60.300	46.200	31.700	23.000	14.200	17.400	23.400	26.100	32.100
13	99.600	347.000	90.500	68.400	36.900	31.600	20.300	16.300	15.800	21.700	24.300	29.700
14	110.000	331.000	92.500	68.200	41.100	30.100	22.000	14.700	16.300	20.600	28.800	29.200
15	106.000	343.000	92.900	61.300	40.000	30.800	23.000	15.800	16.300	22.200	26.500	29.600
16	91.000	316.000	88.600	62.400	40.000	26.900	21.900	17.400	15.800	18.600	23.600	22.800
17	90.400	278.000	79.000	57.200	40.600	28.100	22.300	16.300	16.800	18.900	23.500	23.800
18	79.900	245.000	83.700	58.200	39.000	26.800	22.500	18.900	16.300	20.900	23.600	22.400
19	77.700	215.000	86.000	59.700	43.100	28.900	22.400	24.700	16.800	23.100	25.900	23.400
20	77.500	192.000	95.100	60.000	32.500	29.100	22.400	29.500	15.800	20.800	24.700	22.900
21	78.900	181.000	92.400	66.700	35.500	31.900	20.300	23.700	16.800	21.100	23.400	26.300
22	81.800	170.000	90.500	62.700	35.400	38.500	19.900	17.900	17.400	20.600	21.600	29.100
23	130.000	155.000	79.900	60.000	30.800	37.100	17.700	17.900	17.900	20.400	18.100	27.300
24	178.000	147.000	74.400	58.500	31.800	31.900	19.500	19.500	19.500	21.200	21.000	26.900
25	179.000	145.000	73.800	55.500	31.400	31.600	18.800	20.000	18.900	20.600	34.000	41.100
26	183.000	187.000	78.000	51.600	30.700	35.400	17.300	18.900	18.400	29.600	33.500	82.000
27	147.000	184.000	73.800	53.000	30.700	30.000	17.900	20.500	18.900	40.300	31.600	78.000
28	179.000	170.000	72.300	51.500	31.100	28.800	17.700	18.400	18.900	44.500	27.800	50.900
29	185.000		68.100	51.400	31.400	27.700	19.100	19.500	18.400	48.100	24.700	60.300
30	254.000		63.900	45.700	31.200	26.100	18.100	20.000	25.800	33.300	22.400	61.900
31	312.000		68.400		32.400		21.000	20.000		21.900		47.200
Average	130.000	292.200	95.230	60.860	38.610	31.430	22.830	18.500	17.370	24.510	24.560	33.550
Lowest	77.500	145.000	63.900	45.700	30.700	26.100	17.300	14.200	12.100	16.700	18.100	19.500
Highest	312.000	427.000	160.000	73.300	48.600	38.500	31.200	29.500	25.800	48.100	34.000	82.000
Monthly total (million cu m)	348.30	706.90	255.10	157.70	103.40	81.47	61.14	49.54	45.03	65.66	63.65	89.87
Nat'lised runoff (mm)	35	71	26	16	10	8	6	5	5	7	6	9
Rainfall (mm)	96	118	14	34	7	48	18	32	35	60	33	70

Statistics of monthly data for previous record (Jan 1883 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
Mean nat'lised flows:	Avg.	137.700	134.200	116.100	86.630	65.130	48.830	35.260	32.630	34.340	49.900	83.280	112.400
	Low	32.210	25.100	27.320	26.510	18.200	13.470	10.760	11.040	11.230	15.120	17.750	22.480
	(year)	1905	1905	1944	1976	1944	1944	1921	1976	1898	1934	1921	1921
	High	332.900	348.100	370.900	199.800	181.300	178.700	88.840	88.780	139.400	185.300	339.600	343.900
	(year)	1915	1904	1947	1951	1932	1903	1968	1931	1968	1903	1894	1929
nat'lised runoff:	Avg	37	33	31	23	18	13	9	9	9	13	22	30
	Low	9	6	7	7	5	4	3	3	3	4	5	6
	High	90	88	100	52	49	47	24	24	36	50	88	93
Rainfall:	Avg	65	49	53	48	54	52	58	64	57	73	72	73
	Low	14	3	3	3	8	3	8	3	3	5	8	13
	High	137	127	142	104	137	137	130	147	157	188	188	185

Summary statistics (naturalised flows)

	For 1990		For record preceding 1990		1990 As % of pre-1990
Mean flow (m^3s^{-1})	84.300		77.770		83
Lowest yearly mean			30.940	1934	
Highest yearly mean			131.800	1951	
Lowest monthly mean	17.370	Sep	10.760	Jul 1921	
Highest monthly mean	292.200	Feb	370.900	Mar 1947	
Lowest daily mean	12.100	10 Sep	7.370	9 Jul 1934	
Highest daily mean	427.000	4 Feb	1065.000	18 Nov 1894	
10% exceedance	152.900		171.800		89
50% exceedance	31.180		53.410		58
95% exceedance	16.500		18.420		90
Annual total (million cu m)	2028.00		2454.00		83
Annual runoff (mm)	204		247		83
Annual rainfall (mm)	565		718		79
[1941-70 rainfall average (mm)			724]		

Factors affecting flow regime

- Reservoir(s) in catchment.
- Flow influenced by groundwater abstraction and/or recharge.
- Abstraction for public water supplies.
- Flow reduced by industrial and/or agricultural abstractions.
- Augmentation from surface water and/or groundwater.
- Augmentation from effluent returns.

Station and catchment description

Ultrasonic station commissioned in 1974, multi-path operation from 1986. Full range. No peak flows pre-1974 when dmfs derived from Teddington weir complex (70m wide); significant structural improvements since 1883. Some underestimation of pre-1951 low flows. Baseflow sustained mainly from the Chalk and the Oolites. Runoff decreased by major PWS abstractions - naturalised flows available. Diverse topography, geology and land use which - together with the pattern of water utilisation - has undergone important historical changes.

Part (ii) - The monthly flow data

The introductory information (measuring authority etc.) is as described in Part (i).

Hydrometric statistics for the year

The monthly average, peak flow, runoff and rainfall figures are equivalent to the summary information following the daily mean gauged discharges in Part (i). Because of the rounding of monthly runoff values the runoff for the year may differ slightly from the sum of the individual monthly totals.

A 'comment' - appearing at the end of the station entry - may be used to draw attention to any particular factors influencing the accuracy of the data for the featured year or, more generally, to indicate that the published hydrometric data are subject to review.

Monthly and yearly statistics for previous record

Monthly mean flows (Average, Low and High) and the monthly rainfall and runoff figures are equivalent to those presented in Part (i). An asterisk indicates an incomplete rainfall series; the first and last years of data are given in parentheses. Due to the rounding of monthly runoff values, the average runoff for the year derived from the previous record may differ slightly from the sum of the individual monthly totals. The peak flow is the highest discharge, in cubic metres per second, for each month. For many stations the archived series of monthly instantaneous maximum flows, from which the preceding record peak is abstracted, is incomplete, particularly for the earlier years, and certain of the peak flows are known to be of limited accuracy. Where the peak value - in an incomplete series - is exceeded by the highest daily mean flow on record, the latter is substituted; such substitutions are indicated by a 'd' flag. An examination of the quality of the peak flow figures is underway and significant revision may be expected as this review proceeds. The figures are published primarily to provide a guide to the range of river flows experienced throughout the year at the featured gauging stations.

Factors affecting flow regime

Code letters are used as described in Part (i).

Station type

The station type is coded by the list of abbreviations given below - two abbreviations may be applied to each station relating to the measurement of lower or higher flows.

B	Broad-crested weir
C	Crump (triangular profile) single crest weir
CB	Compound broad-crested weir. The compounding may include a mixture of types such as rectangular profiles, flumes and shallow-Vs and with or without divide walls
CC	Compound Crump weir
EM	Electromagnetic gauging station
EW	Essex weir (simple Crump weir modified with angled, sloping, triangular profile flanking crests) in trapezoidal channel
FL	Flume
FV	Flat-V triangular profile weir
MIS	Miscellaneous method
TP	Rectangular thin-plate weir
US	Ultrasonic gauging station
VA	Velocity-area gauging station
VN	Triangular (V notch) thin-plate weir

004001 Conon at Moy Bridge 1990

Measuring authority: HRPB
First year: 1947
Grid reference: 28 (NH) 482 547
Level stn. (m OD): 10.00
Catchment area (sq km): 961.8
Max alt. (m OD): 1052

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	92.510	150.000	191.500	72.290	31.120	24.510	40.010	36.970	57.790	89.130	70.820	78.080	77.538
(m^3s^{-1}):	Peak	264.60	476.10	507.00	162.10	89.95	83.49	78.08	88.03	154.10	159.80	227.20	166.90	507.00
Runoff (mm)		258	377	533	195	87	66	111	103	156	248	191	217	**2542**
Rainfall (mm)		301	365	453	133	53	112	77	116	188	212	164	243	**2417**

Monthly and yearly statistics for previous record (Oct 1947 to Dec 1989—incomplete or missing months total 5.7 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	68.110	60.130	56.600	40.960	31.720	21.890	20.460	27.710	40.610	54.190	63.470	71.420	**46.387**
flows	Low	31.690	25.810	18.670	13.940	10.940	8.861	2.959	8.162	12.510	23.090	24.090	27.970	**29.991**
(m^3s^{-1})	High	138.300	164.600	127.900	75.730	53.050	47.560	36.690	45.140	94.870	94.030	121.700	165.100	**63.199**
Peak flow (m^3s^{-1})		486.20	703.90	362.90	203.90	232.20	165.20	247.40	254.90	223.70	324.80	411.80	1076.00	**1076.00**
Runoff (mm)		190	153	158	110	88	59	57	77	109	151	171	199	**1522**
Rainfall (mm)*		194	135	162	101	104	94	107	127	167	214	201	225	**1831**

*(1953-1989)

Factors affecting flow regime: H
Station type: VA

1990 runoff is 167% of previous mean rainfall 132%

007002 Findhorn at Forres 1990

Measuring authority: HRPB
First year: 1958
Grid reference: 38 (NJ) 018 583
Level stn. (m OD): 9.60
Catchment area (sq km): 781.9
Max alt. (m OD): 941

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	27.030	53.760	58.360	17.010	6.724	17.280	14.400	14.850	17.890	27.170	27.750	27.550	**25.649**
(m^3s^{-1}):	Peak	125.20	300.10	267.30	37.82	15.65	534.20	191.80	420.00	202.60	430.60	153.10	135.80	**534.20**
Runoff (mm)		93	166	200	56	23	57	49	51	59	93	92	94	**1034**
Rainfall (mm)		116	197	228	63	33	130	52	119	112	121	133	141	**1445**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	24.150	20.470	23.580	21.520	15.960	10.170	9.771	13.900	15.170	20.880	22.890	24.740	**18.598**
flows	Low	9.429	5.259	8.615	5.560	3.836	3.321	2.744	2.478	2.863	3.547	9.300	8.332	**11.994**
(m^3s^{-1})	High	51.190	44.700	54.320	54.170	41.990	41.900	24.650	58.840	37.870	49.540	39.710	61.550	**25.482**
Peak flow (m^3s^{-1})		381.10	537.70	410.00	173.50	294.30	430.20	469.10	2410.00	861.10	512.00	465.20	616.90	**2410.00**
Runoff (mm)		83	64	81	71	55	34	33	48	50	72	76	85	**751**
Rainfall (mm)		104	68	86	63	73	76	85	104	100	111	113	105	**1088**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 138% of previous mean rainfall 133%

008007 Spey at Invertruim 1990

Measuring authority: NERPB
First year: 1952
Grid reference: 27 (NN) 687 962
Level stn. (m OD): 242.50
Catchment area (sq km): 400.4
Max alt. (m OD): 951

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	15.120	39.980	42.630	4.768	2.767	3.173	2.711	2.295	3.841	6.702	4.189	7.142	**11.120**
(m^3s^{-1}):	Peak	70.19	269.10	171.30	8.17	4.88	20.99	8.07	6.78	19.37	39.38	15.36	42.30	**269.10**
Runoff (mm)		101	242	285	31	19	21	18	15	25	45	27	48	**876**
Rainfall (mm)		321	397	398	115	33	95	63	103	101	179	89	270	**2164**

Monthly and yearly statistics for previous record (Oct 1952 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	8.990	8.674	6.600	4.174	3.599	2.927	2.841	3.375	4.733	6.877	7.523	9.430	**5.646**
flows	Low	3.314	1.953	2.722	2.075	1.413	1.123	1.042	0.852	1.454	1.638	3.235	3.518	**3.935**
(m^3s^{-1})	High	23.280	21.020	20.600	7.126	6.210	6.269	5.021	7.545	14.650	14.830	15.960	24.970	**8.037**
Peak flow (m^3s^{-1})		264.50	198.20	274.50	61.90	43.92	45.93	72.83	75.00	108.00	106.90	170.60	259.50	**274.50**
Runoff (mm)		60	41	44	27	24	19	19	23	31	46	49	63	**445**
Rainfall (mm)		161	106	123	72	88	76	87	105	134	167	161	177	**1457**

Factors affecting flow regime: H
Station type: VA

1990 runoff is 197% of previous mean rainfall 149%

009001 Deveron at Avochie 1990

Measuring authority: NERPB
First year: 1959
Grid reference: 38 (NJ) 532 464
Level stn. (m OD): 81.80
Catchment area (sq km): 441.6
Max alt. (m OD): 775

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.526	7.424	7.812	4.457	3.274	4.121	5.056	3.481	4.267	10.630	14.860	9.333	**6.508**
(m^3s^{-1}):	Peak	23.79	32.99	45.82	9.06	11.93	62.96	53.53	25.19	44.96	134.10	51.12	51.72	**134.10**
Runoff (mm)		21	41	47	26	20	24	31	21	25	64	87	57	**485**
Rainfall (mm)		48	78	51	46	61	110	54	75	102	129	122	62	**938**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	12.510	10.690	11.710	10.300	7.746	5.176	4.663	6.012	5.832	8.894	10.590	11.510	**8.798**
flows	Low	3.688	3.052	3.391	4.314	3.631	2.610	1.766	1.621	2.092	1.934	2.668	3.504	**4.051**
(m^3s^{-1})	High	24.440	19.720	22.230	21.500	21.930	11.130	9.841	19.110	16.040	28.210	29.790	23.590	**12.437**
Peak flow (m^3s^{-1})		120.50	84.90	118.00	76.13	183.70	153.10	146.40	236.50	155.70	221.90	177.70	157.10	**236.50**
Runoff (mm)		76	59	71	60	47	30	28	36	34	54	62	70	**629**
Rainfall (mm)		94	64	77	70	73	65	77	93	84	99	103	90	**989**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 74% of previous mean rainfall 95%

010002 Ugie at Inverugie — 1990

Measuring authority: NERPB
First year: 1971

Grid reference: 48 (NK) 101 485
Level stn. (m OD): 8 50

Catchment area (sq km): 325.0
Max alt. (m OD): 234

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2.363	4 164	3 396	1 927	1 467	1.938	1 574	2 042	1.924	6 019	7.833	5 805	**3.364**
(m^3s^{-1}):	Peak	13 57	11 82	7.73	2 59	1 79	6 85	4 32	8 60	8 02	35 69	24 47	10 20	**35.69**
Runoff (mm)		19	31	28	15	12	15	13	17	15	50	62	48	**326**
Rainfall (mm)		46	73	26	39	35	92	40	79	80	123	80	47	**760**

Monthly and yearly statistics for previous record (Feb 1971 to Dec 1989)

Mean	Avg	8 116	6.551	5.691	4 365	3.483	2 315	2 028	2 140	2.482	4 710	6 135	7 287	**4.603**
flows	Low	2 085	2 088	1 791	1 624	1 738	1 200	0.977	0 858	0 912	0 894	1 531	1.360	**2.089**
(m^3s^{-1})	High	11 300	14 620	9.576	7 785	8 103	4.296	4 901	6 225	7.052	9 079	18 230	13 320	**6.505**
Peak flow (m^3s^{-1})		66 40	96.74	66 40	40 26	35.57	13 29	23 66	21 24	36 25	94.52	99 28	87 75	**99.28**
Runoff (mm)		67	49	47	35	29	18	17	18	20	39	49	60	**447**
Rainfall (mm)		80	46	67	52	51	51	59	63	80	84	88	79	**800**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 73% of previous mean
rainfall 95%

011001 Don at Parkhill — 1990

Measuring authority: NERPB
First year: 1969

Grid reference: 38 (NJ) 887 141
Level stn. (m OD): 32.40

Catchment area (sq km): 1273.0
Max alt. (m OD): 872

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	8.070	18 720	13.240	8 487	7 514	6 896	9 660	5 704	5 713	16 150	31.150	21 970	**12.721**
(m^3s^{-1}):	Peak	28 57	45 30	30.23	12 93	17 31	19 54	53 27	14 76	22 04	113.20	101 80	42 68	**113.20**
Runoff (mm)		17	36	28	17	16	14	20	12	12	34	63	46	**315**
Rainfall (mm)		54	77	26	37	54	101	41	56	74	119	103	59	**801**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1989)

Mean	Avg	30 590	27.980	28 210	25 220	16 790	12.080	10 490	11 800	11 180	18.860	22 060	26 770	**20.137**
flows	Low	9.259	6 557	6 274	9 174	9.544	6 424	5 128	4.644	5 019	4 567	5 692	7 738	**8 833**
(m^3s^{-1})	High	48 660	52.240	48 950	44 750	34.770	27.560	27 530	40 150	36.470	51.940	86 230	50.960	**29.185**
Peak flow (m^3s^{-1})		185.90	131 00	143 70	107 50	92 06	101 60	118 10	277 40	107 20	273 10	213 20	154.50	**277.40**
Runoff (mm)		64	54	59	51	35	25	22	25	23	40	45	56	**499**
Rainfall (mm)		96	57	74	64	64	59	70	75	75	86	86	79	**885**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 63% of previous mean
rainfall 91%

013007 North Esk at Logie Mill — 1990

Measuring authority: TRPB
First year: 1976

Grid reference: 37 (NO) 699 640
Level stn. (m OD): 10 60

Catchment area (sq km): 730.0
Max alt. (m OD): 939

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	23 730	46 630	16.190	7 156	4 110	6.955	7 663	3 308	4 401	22 150	17 180	15 760	**14.402**
(m^3s^{-1})	Peak	110 60	195 00	30 89	14 88	9 08	131.50	90 46	7 69	23.04	159 60	53 57	62 49	**195.00**
Runoff (mm)		87	155	59	25	15	25	28	12	16	81	61	58	**622**
Rainfall (mm)		135	168	45	40	40	109	27	55	65	154	66	75	**979**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1989—incomplete or missing months total 0 1 years)

Mean	Avg	24 290	24 670	30.140	22 450	15 650	9 282	6 899	10 230	11.560	27.920	24 560	29 510	**19.757**
flows	Low	12 460	9 795	16 450	9 071	6.179	3 684	2 685	2 548	3.622	4 099	5.281	15 950	**11.043**
(m^3s^{-1})	High	48.590	45 670	42 750	34.750	36 420	24 300	18 060	35 810	30 540	80 410	91.170	59 880	**24 926**
Peak flow (m^3s^{-1})		240 80	104 50	169.10	230.40	180 80	271 90	133 00	199.20	342.80	452 80	462 10	398 10	**462.10**
Runoff (mm)		89	83	111	80	57	33	25	38	41	102	87	108	**854**
Rainfall (mm)		117	79	112	61	79	65	74	86	103	136	107	122	**1141**

Factors affecting flow regime: S P I
Station type: VA

1990 runoff is 73% of previous mean
rainfall 86%

013008 South Esk at Brechin — 1990

Measuring authority: TRPB
First year: 1983

Grid reference: 37 (NO) 600 596
Level stn. (m OD): 18 00

Catchment area (sq km): 490.0
Max alt. (m OD): 958

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	18 030	34 820	15 080	6 358	3 477	4 031	4 675	2.420	3.148	14 240	9 365	10.210	**10.340**
(m^3s^{-1})	Peak	62 49	102 20	24 34	16.04	6.01	57 76	56 63	5 85	16.34	65.97	26 85	29 95	**102 20**
Runoff (mm)		99	172	82	34	19	21	26	13	17	78	50	56	**665**
Rainfall (mm)		165	201	66	40	38	113	26	58	55	159	60	86	**1067**

Monthly and yearly statistics for previous record (Jan 1983 to Dec 1989)

Mean	Avg	15.630	12 890	17.160	14.300	12 240	7 022	4 976	8.122	8.739	12.740	15 190	16 250	**12.108**
flows	Low	10 600	7 069	9 773	9 738	6 099	3 316	1 685	1 405	2.401	3 494	3.949	9 996	**8.317**
(m^3s^{-1})	High	21.180	19 330	26.610	21.340	28.180	11 120	10 010	25 920	21 860	28 630	49.350	23 650	**14.856**
Peak flow (m^3s^{-1})		73 92	73 73	96.99	90 85	96 29	88 02	33 20	117 70	122.50	170 60	144 30	149 70	**170.60**
Runoff (mm)		85	65	94	76	67	37	27	44	46	70	80	89	**780**
Rainfall (mm)		130	69	109	67	83	69	73	102	93	120	112	117	**1144**

Factors affecting flow regime: I
Station type: VA

1990 runoff is 85% of previous mean
rainfall 93%

014001 Eden at Kemback 1990

Measuring authority: TRPB
First year: 1967
Grid reference: 37 (NO) 415 158
Level stn (m OD): 6 20
Catchment area (sq km): 307 4
Max alt (m OD): 522

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7.626	10 580	4 430	2 338	1 722	1 555	2.192	1 108	0 858	3 449	3 265	4 390	3.587
(m^3s^{-1}):	Peak	36 03	31 37	10 38	3 99	2 26	15.25	16 84	4 03	1 22	24.10	14 28	12 37	36 03
Runoff (mm)		66	83	39	20	15	13	19	10	7	30	28	38	368
Rainfall (mm)		130	128	38	31	29	140	23	61	41	137	47	73	878

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1989)

Mean	Avg	6 857	6 277	4.993	3 733	3 075	2 211	1 505	1 724	2.045	3 186	4 524	5 699	3.808
flows	Low	2.546	2 170	1 408	1.199	1 406	1 077	0 861	0 799	0 749	0 833	0 830	1 731	1 446
(m^3s^{-1})	High	10 890	19.460	8.096	7 243	8 335	6 651	3.390	6 038	11 260	6 880	14 440	12 390	5.593
Peak flow (m^3s^{-1})		59 05	71 31	54 89	52 69	47 48	41 93	26 20	17 19	53 64	35 97	39 37	47 82	71.31
Runoff (mm)		60	50	44	31	27	19	13	15	17	28	38	50	391
Rainfall (mm)		83	54	66	46	66	53	60	61	73	76	73	75	786

Factors affecting flow regime: S GEI
Station type: VA

1990 runoff is 94% of previous mean rainfall 112%

015011 Lyon at Comrie Bridge 1990

Measuring authority: TRPB
First year: 1958
Grid reference: 27 (NN) 786 486
Level stn (m OD): 92 10
Catchment area (sq km): 391 1
Max alt. (m OD): 1215

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	27.710	54 190	67 160	9 693	5 686	7 084	5 389	4 802	4 695	16 110	8.706	15 950	18.766
(m^3s^{-1}):	Peak	137 60	377.90	311.30	29 72	13 11	109 70	21.43	25 33	33 76	128 70	51 17	94 67	377.90
Runoff (mm)		190	335	460	64	39	47	37	33	31	110	58	109	1513
Rainfall (mm)		480	560	460	135	45	109	68	101	112	277	101	289	2737

Monthly and yearly statistics for previous record (Jan 1958 to Dec 1989)

Mean	Avg	17 240	13 690	14 190	9 985	9 603	6 496	6 204	7 602	10 470	15 000	14 590	15 820	11.742
flows	Low	3 596	3 198	4.219	4 002	3 537	3 514	3 062	2 221	2 843	3.662	5.320	6 187	8.330
(m^3s^{-1})	High	43.920	33 450	37 440	17 100	24.520	18.870	20 800	28.940	28 120	29 930	30 550	32 780	19.870
Peak flow (m^3s^{-1})		271.20	315 40	254 70	89 80	124 90	65 02	154 70	128 70	145 10	191 90	271 30	198 00	315.40
Runoff (mm)		118	85	97	66	66	43	42	52	69	103	97	108	947
Rainfall (mm)*		259	140	200	79	107	88	105	126	186	217	234	239	1980

*(1971-1989)

Factors affecting flow regime: H
Station type: VA

1990 runoff is 160% of previous mean rainfall 138%

016003 Ruchill Water at Cultybraggan 1990

Measuring authority: TRPB
First year: 1970
Grid reference: 27 (NN) 764 204
Level stn (m OD): 62.30
Catchment area (sq km): 99.5
Max alt (m OD): 985

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.110	20 280	11 270	2 708	0 714	2 776	1 839	1 678	1 547	8 273	2 959	5 512	5.978
(m^3s^{-1}):	Peak	90 24	189.20	54 82	11 08	1 45	98 59	17.65	39 56	16 45	176 50	17.84	57.88	189.20
Runoff (mm)		353	493	303	71	19	72	50	45	40	223	77	148	1894
Rainfall (mm)		474	490	303	109	43	164	68	122	75	292	71	257	2468

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	7.790	5.973	6 634	2 976	2.768	1 828	1 760	2 661	4 931	6 253	7 467	7 549	4.880
flows	Low	2.263	1 050	1 802	0 758	0 304	0 402	0 239	0 164	0 345	0 789	2.306	1.630	3.281
(m^3s^{-1})	High	15 240	12 020	13.660	5 156	10 120	4 562	5 739	9 246	10 260	12 130	16 550	12.350	6.586
Peak flow (m^3s^{-1})		250 40	130 20	165 30	87 32	165 00	221 30	160 00	143 00	227 30	136 60	183 30	174 50	250.40
Runoff (mm)		210	147	179	78	75	48	47	72	128	168	195	203	1548
Rainfall (mm)		235	157	184	86	119	94	115	138	199	210	232	231	2000

Factors affecting flow regime: N
Station type: VA

1990 runoff is 122% of previous mean rainfall 123%

016004 Earn at Forteviot Bridge 1990

Measuring authority: TRPB
First year: 1972
Grid reference: 37 (NO) 043 184
Level stn (m OD): 7.80
Catchment area (sq km): 782.2
Max alt (m OD): 985

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	72 020	127 100	67 820	19.880	7 259	9 926	10 360	5 368	6.503	33 110	19 210	28 170	33.347
(m^3s^{-1}):	Peak	187 90	337 00	132 40	43 60	18 30	101 30	73 38	20.21	15 36	165 20	41 25	126 50	337.00
Runoff (mm)		247	393	232	66	25	33	35	18	22	113	64	96	1344
Rainfall (mm)		324	357	196	70	42	141	47	82	54	218	59	176	1766

Monthly and yearly statistics for previous record (Oct 1972 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg.	47.240	37 460	37 900	20 440	15 070	9 559	8.353	11 910	20 510	32 010	41 180	43 720	27.081
flows	Low	19 630	16 070	12.310	8 389	4 906	4 095	2 658	2 456	5 302	5 984	15 120	15 060	15.508
(m^3s^{-1})	High	85 510	66 290	74.340	33 790	47 200	20 070	24 620	46 660	55.680	61 980	89 750	79 160	33.908
Peak flow (m^3s^{-1})		277.50	214 60	264 60	162.20	155.20	114 90	142 30	169 70	271 80	241 20	328 60	238 70	328.60
Runoff (mm)		162	117	130	68	52	32	29	41	68	110	136	150	1093
Rainfall (mm)		165	104	142	57	84	69	85	106	153	151	163	164	1443

Factors affecting flow regime: P H
Station type: VA

1990 runoff is 123% of previous mean rainfall 122%

017001 Carron at Headswood 1990

Measuring authority: FRPB
First year: 1969
Grid reference: 26 (NS) 832 820
Level stn (m OD): 17.10
Catchment area (sq km): 122.3
Max alt (m OD): 570

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11.300	14.130	9.819	2.266	1.041	1.291	1.228	1.048	1.088	5.599	1.931	5.065	**4.606**
(m^3s^{-1})	Peak	53.70	147.70	41.90	8.14	2.59	20.12	11.54	7.96	7.85	121.40	21.04	42.60	**147.70**
Runoff (mm)		248	279	215	48	23	27	27	23	23	123	41	111	**1188**
Rainfall (mm)		378	351	258	106	53	145	55	131	88	255	60	195	**2075**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1989)

Mean	Avg	5.566	3.959	3.839	1.976	1.527	1.196	1.123	1.652	3.062	4.011	5.337	5.233	**3.204**
flows	Low	1.943	1.018	1.232	0.807	0.590	0.580	0.549	0.557	0.467	0.424	1.412	1.084	**2.108**
(m^3s^{-1})	High	10.890	8.959	9.295	3.444	5.724	2.834	4.650	8.092	16.720	10.270	9.759	10.470	**4.575**
Peak flow (m^3s^{-1})		130.30	78.40	92.83	43.62	51.35	33.74	65.38	84.48	124.30	124.80	105.80	147.90	**147.90**
Runoff (mm)		122	79	84	42	33	25	25	36	65	88	113	115	**827**
Rainfall (mm)		169	107	141	72	88	83	89	116	154	163	180	168	**1530**

Factors affecting flow regime: S E
Station type: VA

1990 runoff is 144% of previous mean
rainfall 136%

017002 Leven at Leven 1990

Measuring authority: FRPB
First year: 1969
Grid reference: 37 (NO) 369 006
Level stn (m OD): 4.10
Catchment area (sq km): 424.0
Max alt (m OD): 522

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.190	21.400	13.070	3.703	2.215	2.323	4.099	3.457	1.801	7.642	5.577	6.450	**7.000**
(m^3s^{-1})	Peak	43.19	40.28	23.27	8.67	3.50	25.24	22.70	16.22	2.60	28.89	10.17	16.63	**43.19**
Runoff (mm)		83	122	83	23	14	14	26	22	11	48	34	41	**521**
Rainfall (mm)		179	165	82	39	30	147	37	74	50	160	48	103	**1114**

Monthly and yearly statistics for previous record (Aug 1969 to Dec 1989)

Mean	Avg	11.300	10.110	7.540	5.147	3.683	3.087	1.881	3.176	3.840	5.938	8.360	10.410	**6.189**
flows	Low	4.786	2.882	1.543	1.413	2.012	1.166	0.902	0.820	0.970	0.795	0.972	3.462	**2.269**
(m^3s^{-1})	High	20.700	22.660	14.670	9.712	12.050	7.044	5.300	11.840	21.040	13.170	26.510	19.200	**9.294**
Peak flow (m^3s^{-1})		53.54	128.00	39.19	44.68	44.54	26.93	28.83	25.69	84.25	40.67	56.76	62.69	**128.00**
Runoff (mm)		71	58	48	31	23	19	12	20	23	38	51	66	**461**
Rainfall (mm)		94	61	79	50	63	63	66	75	89	88	95	93	**916**

Factors affecting flow regime: SR EI
Station type: VA

1990 runoff is 113% of previous mean
rainfall 122%

018003 Teith at Bridge of Teith 1990

Measuring authority: FRPB
First year: 1957
Grid reference: 27 (NN) 725 011
Level stn (m OD): 14.70
Catchment area (sq km): 518.0
Max alt. (m OD): 1165

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	59.700	109.100	81.670	17.630	5.980	8.686	9.550	8.690	11.830	34.460	18.210	32.120	**32.720**
(m^3s^{-1})	Peak	176.20	361.80	215.30	30.02	11.23	62.42	32.34	32.02	27.93	141.90	35.44	120.60	**361.80**
Runoff (mm)		309	509	422	88	31	43	49	45	59	178	91	166	**1992**
Rainfall (mm)		460	502	397	127	46	145	79	126	126	311	99	270	**2688**

Monthly and yearly statistics for previous record (Jan 1957 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg	35.170	28.270	27.310	15.680	14.760	9.394	9.537	13.490	20.270	27.970	31.140	34.450	**22.276**
flows	Low	9.608	5.743	6.589	5.612	4.017	3.953	3.781	3.135	3.635	5.897	9.842	11.790	**15.094**
(m^3s^{-1})	High	72.430	70.420	62.510	30.040	55.000	21.520	26.390	54.210	45.020	66.410	70.650	72.370	**31.131**
Peak flow (m^3s^{-1})		303.90	271.20	217.40	93.10	158.00	161.70	118.30	174.40	184.10	242.60	245.10	241.10	**303.90**
Runoff (mm)		182	133	141	78	76	47	49	70	101	145	156	178	**1357**
Rainfall (mm)*		230	145	177	89	122	102	110	135	201	220	220	219	**1970**

*(1963-1989)

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 147% of previous mean
rainfall 136%

018005 Allan Water at Bridge of Allan 1990

Measuring authority: FRPB
First year: 1971
Grid reference: 26 (NS) 786 980
Level stn (m OD): 11.20
Catchment area (sq km): 210.0
Max alt (m OD): 633

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	16.750	22.270	15.530	4.551	1.975	3.505	3.724	2.172	2.025	10.540	5.067	8.947	**8.019**
(m^3s^{-1})	Peak	56.10	81.93	55.83	15.80	4.65	61.86	56.28	15.20	7.45	97.82	19.92	51.54	**97.82**
Runoff (mm)		214	257	198	56	25	43	48	28	25	134	63	114	**1204**
Rainfall (mm)		290	296	196	72	46	151	45	104	53	197	62	164	**1678**

Monthly and yearly statistics for previous record (Jul 1971 to Dec 1989)

Mean	Avg	10.820	8.487	8.917	4.613	3.814	2.569	2.045	3.179	5.089	7.143	9.072	9.960	**6.303**
flows	Low	4.751	3.631	3.152	1.654	1.189	0.945	0.726	0.648	0.907	0.971	3.642	3.709	**4.269**
(m^3s^{-1})	High	18.550	16.610	18.170	7.717	15.430	5.423	6.309	12.390	14.600	12.420	17.760	17.140	**9.090**
Peak flow (m^3s^{-1})		98.20	67.84	83.43	69.62	72.11	58.10	66.37	67.48	105.60	111.00	97.89	112.60	**112.60**
Runoff (mm)		138	99	114	57	49	32	26	41	63	91	112	127	**948**
Rainfall (mm)		144	90	121	61	80	69	81	96	129	133	138	143	**1285**

Factors affecting flow regime: I
Station type: VA

1990 runoff is 127% of previous mean
rainfall 130%

020001 Tyne at East Linton 1990

Measuring authority: FRPB
First year: 1961
Grid reference: 36 (NT) 591 768
Level stn. (m OD): 16 50
Catchment area (sq km): 307.0
Max alt. (m OD): 527

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.086	4 717	1 970	0 856	0 780	0 879	1 292	0 729	0 813	7 402	3.426	7.346	2.773
(m^3s^{-1}):	Peak	23 91	17 17	5 56	1 07	1 02	6 27	14.40	1 45	12 62	148 50	19 22	37 88	148.50
Runoff (mm)		27	37	17	7	7	7	11	6	7	65	29	64	285
Rainfall (mm)		89	89	23	19	34	112	42	48	73	177	45	96	847

Monthly and yearly statistics for previous record (Jan 1961 to Dec 1989)

Mean	Avg	4 650	3 765	3 948	2.876	2.421	1.481	1.288	1.676	1 792	2 166	3 496	3 598	2.759
flows	Low	1 032	0 783	0 531	0 644	0 926	0 586	0 500	0 468	0 461	0 450	0 523	0 582	0.709
(m^3s^{-1})	High	11 540	8.624	8 789	7 824	11 600	6 142	4 393	9 855	8 490	7 000	11.210	8.405	4.146
Peak flow (m^3s^{-1})		93 02	39 39	66 17	50 88	119 70	59 12	70 18	112 70	90 84	82.71	127 50	52.02	127.50
Runoff (mm)		41	30	34	24	21	13	11	15	15	19	30	31	284
Rainfall (mm)		63	41	59	48	60	52	62	78	67	66	70	60	726

Factors affecting flow regime: EI
Station type: VA

1990 runoff is 100% of previous mean rainfall 117%

021006 Tweed at Boleside 1990

Measuring authority: TWRP
First year: 1961
Grid reference: 36 (NT) 498 334
Level stn. (m OD): 94.50
Catchment area (sq km): 1500 0
Max alt. (m OD): 839

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	97 890	152 200	58 620	16 490	11 360	12 140	20 270	10 890	12 160	62 170	28 500	86 480	46.900
(m^3s^{-1}):	Peak	337.90	507.60	147 30	23.83	33 45	68 10	95 36	39 26	50 63	479 60	60.91	426 10	507.60
Runoff (mm)		175	245	105	29	20	21	36	19	21	111	49	154	986
Rainfall (mm)		233	251	79	49	50	121	65	80	73	189	53	179	1422

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989)

Mean	Avg	55 500	44 110	44 260	29 780	24 270	16 160	15 000	22 020	29 990	40 320	49.340	51 960	35.203
flows	Low	14 300	10 480	14 930	9.896	7.605	7.413	6 362	5 012	4 572	4 435	11 570	22 450	18.577
(m^3s^{-1})	High	110 700	81 860	101 000	57 330	64 330	32 820	40 970	81 400	95 510	96 720	119 800	100 400	44.323
Peak flow (m^3s^{-1})		678 60	483 90	470 10	248 90	182 80	126 00	342 60	444 30	496 30	1019 00	486 30	571 90	1019.00
Runoff (mm)		99	72	79	51	43	28	27	39	52	72	85	93	741
Rainfall (mm)		123	81	103	68	86	76	87	108	118	122	122	119	1213

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 133% of previous mean rainfall 117%

021012 Teviot at Hawick 1990

Measuring authority: TWRP
First year: 1963
Grid reference: 36 (NT) 522 159
Level stn. (m OD): 90 10
Catchment area (sq km): 323 0
Max alt. (m OD): 608

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	26 210	34 800	12 840	2 852	2.589	2.072	3 074	1 320	1 608	12 050	5 055	22 350	10.453
(m^3s^{-1}):	Peak	146 20	176 10	65 36	5 27	25 84	30 78	20 61	5 89	16 81	190 40	24 59	230 00	230.00
Runoff (mm)		217	261	106	23	21	17	25	11	13	100	41	185	1021
Rainfall (mm)		238	266	81	44	59	107	67	68	64	171	50	210	1425

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989)

Mean	Avg.	13 420	10 640	10.110	6 178	5.504	3.950	3 480	4 778	6 277	9 988	12 420	13 310	8.332
flows	Low	6.981	4.234	2.991	2 189	1 296	1 099	0 675	0 734	0.915	0 816	2 555	4 522	4.183
(m^3s^{-1})	High	28 560	18 510	21 640	13 030	17 340	10 500	12 300	19.120	18.960	25 690	29.930	25 460	10.959
Peak flow (m^3s^{-1})		185 90	235 30	182 40	179 00	117.80	89.40	148 30	178 60	185 60	273 40	188 60	210 70	273.40
Runoff (mm)		111	80	84	50	46	32	29	40	50	83	100	110	814
Rainfall (mm)		115	76	104	64	88	77	88	102	106	117	122	122	1181

Factors affecting flow regime: N
Station type: VA

1990 runoff is 125% of previous mean rainfall 121%

021018 Lyne Water at Lyne Station 1990

Measuring authority: TWRP
First year: 1968
Grid reference: 36 (NT) 209 401
Level stn. (m OD): 168 00
Catchment area (sq km): 175.0
Max alt. (m OD): 562

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 507	11 090	5 859	1 555	1.019	0 936	1 819	0 960	1.153	6 579	3 267	7 566	4.078
(m^3s^{-1}):	Peak	30 39	30 19	20 14	2 74	1 73	10 18	12 98	4 42	10 68	73.75	13 72	24.73	73.75
Runoff (mm)		115	153	90	23	16	14	28	15	17	101	48	116	735
Rainfall (mm)		180	174	85	42	43	108	57	81	79	173	53	138	1213

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1989)

Mean	Avg	4 935	4 100	3 619	2.627	1.777	1 410	1 224	1 445	2 014	2 840	4 090	4 292	2.859
flows	Low	1 682	2 158	1 357	1 127	0 882	0 787	0.675	0.605	0 591	0 597	0 977	1 618	1.428
(m^3s^{-1})	High	8 774	8.698	7 325	5 028	4 104	2 653	3.884	5.364	10 440	5 684	8 611	8 374	3.704
Peak flow (m^3s^{-1})		47 50	41 55	27 65	21 46	17 36	16.46	31 72	20 77	58 74	40 49	53 60	37 98	58.74
Runoff (mm)		76	57	55	39	27	21	19	22	30	43	61	66	516
Rainfall (mm)		91	58	82	52	63	62	70	79	93	95	96	89	930

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 143% of previous mean rainfall 130%

021022 Whiteadder Water at Hutton Castle 1990

Measuring authority: TWRP
First year: 1969

Grid reference: 36 (NT) 881 550
Level stn (m OD): 29.00

Catchment area (sq km): 503.0
Max alt (m OD): 533

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.732	9.156	4.282	1.808	1.419	1.393	2.539	1.143	1.625	11.720	8.294	13.140	**5.176**
(m^3s^{-1})	Peak	29.63	47.28	12.14	7.88	2.52	5.62	28.88	2.56	30.81	226.20	28.88	57.51	**226.20**
Runoff (mm)		31	44	23	9	8	7	14	6	8	62	43	70	**325**
Rainfall (mm)		82	81	17	20	31	102	42	42	76	170	62	89	**814**

Monthly and yearly statistics for previous record (Sep 1969 to Dec 1989)

Mean	Avg	11.290	10.010	9.558	7.450	5.297	3.475	2.409	3.043	3.133	4.947	7.204	8.380	**6.333**
flows	Low	2.143	1.557	1.108	1.325	2.113	1.403	1.245	1.162	0.990	1.001	1.100	1.347	**1.829**
(m^3s^{-1})	High	25.990	27.300	19.220	15.850	24.050	8.835	6.626	8.184	16.360	16.670	27.680	20.660	**8.847**
Peak flow (m^3s^{-1})		265.90	160.90	133.90	103.10	226.20	75.82	84.85	181.10	105.80	190.00	279.80	108.10	**279.80**
Runoff (mm)		60	49	51	38	28	18	13	16	16	26	37	45	**397**
Rainfall (mm)		80	51	74	53	65	58	60	71	67	70	73	69	**791**

Factors affecting flow regime: S P
Station type: CC

1990 runoff is 82% of previous mean rainfall 103%

022006 Blyth at Hartford Bridge 1990

Measuring authority: NRA-N
First year: 1966

Grid reference: 45 (NZ) 243 800
Level stn (m OD): 24.60

Catchment area (sq km): 269.4
Max alt. (m OD): 259

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.440	4.242	1.447	0.392	0.422	0.273	0.204	0.117	0.140	0.356	0.467	3.088	**1.031**
(m^3s^{-1})	Peak	6.23	29.46	5.38	1.41	2.14	0.58	0.87	1.30	0.50	1.08	1.44	23.96	**29.46**
Runoff (mm)		14	38	14	4	4	3	2	1	1	4	4	31	**121**
Rainfall (mm)		57	75	19	14	59	56	34	49	40	72	47	89	**611**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1989—incomplete or missing months total 0.4 years)

Mean	Avg	4.575	3.615	3.613	2.287	1.381	0.618	0.457	0.674	0.728	1.670	2.462	3.551	**2.131**
flows	Low	0.587	0.398	0.245	0.359	0.212	0.177	0.096	0.067	0.107	0.111	0.162	0.274	**0.537**
(m^3s^{-1})	High	10.150	7.997	11.090	6.281	4.948	1.895	1.800	2.963	2.695	9.680	5.735	12.500	**3.410**
Peak flow (m^3s^{-1})		146.60	59.52	150.20	80.31	38.86	31.54	21.52	61.09	30.02	56.84	69.20	122.30	**150.20**
Runoff (mm)		45	33	36	22	14	6	5	7	7	17	24	35	**250**
Rainfall (mm)		66	44	62	45	56	52	58	70	62	61	64	63	**703**

Factors affecting flow regime: E
Station type: FV

1990 runoff is 48% of previous mean rainfall 87%

023001 Tyne at Bywell 1990

Measuring authority: NRA-N
First year: 1956

Grid reference: 45 (NZ) 038 617
Level stn (m OD): 14.00

Catchment area (sq km): 2175.6
Max alt. (m OD): 893

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	77.520	162.800	61.210	18.260	15.300	9.216	15.300	11.020	14.190	42.950	27.850	82.770	**44.197**
(m^3s^{-1})	Peak	585.90	1137.00	398.90	43.61	176.30	60.87	122.30	34.43	102.50	424.90	248.80	796.60	**1137.00**
Runoff (mm)		95	181	75	22	19	11	19	14	17	53	33	102	**641**
Rainfall (mm)		171	226	55	44	62	83	53	58	68	131	59	166	**1176**

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	73.320	57.520	56.220	38.710	25.060	18.250	19.750	29.480	34.870	46.680	61.190	68.060	**44.055**
flows	Low	19.220	14.360	20.150	8.461	7.246	4.910	5.199	3.403	4.155	4.727	18.090	23.080	**25.849**
(m^3s^{-1})	High	150.800	98.140	150.900	75.620	60.650	50.010	58.000	77.360	106.600	147.200	147.000	112.000	**63.834**
Peak flow (m^3s^{-1})		1525.00	922.10	1472.00	905.60	476.30	440.30	1105.00	1561.00	1243.00	1586.00	1382.00	1317.00	**1586.00**
Runoff (mm)		90	65	69	46	31	22	24	36	42	57	73	84	**639**
Rainfall (mm)		102	70	86	63	69	68	83	97	90	95	103	104	**1030**

Factors affecting flow regime: S
Station type: VA

1990 runoff is 100% of previous mean rainfall 114%

024004 Bedburn Beck at Bedburn 1990

Measuring authority: NRA-N
First year: 1959

Grid reference: 45 (NZ) 118 322
Level stn. (m OD): 109.00

Catchment area (sq km): 74.9
Max alt. (m OD): 535

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.983	3.212	1.322	0.315	0.281	0.191	0.266	0.128	0.124	0.535	0.804	3.085	**1.010**
(m^3s^{-1})	Peak	15.70	19.38	4.68	0.48	1.19	0.53	2.66	0.20	0.38	4.84	3.71	16.82	**19.38**
Runoff (mm)		71	104	47	11	10	7	10	5	4	19	28	110	**425**
Rainfall (mm)		124	141	39	20	45	68	38	36	51	104	63	141	**870**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	2.088	1.753	1.825	1.391	0.899	0.550	0.455	0.581	0.599	1.210	1.562	1.805	**1.225**
flows	Low	0.515	0.471	0.436	0.440	0.270	0.196	0.152	0.120	0.128	0.146	0.244	0.444	**0.667**
(m^3s^{-1})	High	4.341	4.011	5.128	2.986	2.231	1.524	1.522	1.465	1.790	4.346	3.722	4.488	**1.842**
Peak flow (m^3s^{-1})		34.67	39.16	38.51	35.09	24.06	21.66	27.72	46.19	32.30	38.06	34.26	42.93	**46.19**
Runoff (mm)		75	57	65	48	32	19	16	21	21	43	54	65	**516**
Rainfall (mm)		89	63	74	60	63	58	64	78	70	81	89	85	**874**

Factors affecting flow regime: N
Station type: CC

1990 runoff is 82% of previous mean rainfall 100%

024009 Wear at Chester le Street 1990

Measuring authority: NRA-N
First year: 1977
Grid reference: 45 (NZ) 283 512
Level stn. (m OD): 5.50
Catchment area (sq km): 1008.3
Max alt. (m OD): 747

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	23.710	39.880	15.920	4.740	3.943	3.447	3.567	3.600	3.509	8.097	10.430	32.810	12.662
(m^3s^{-1}):	Peak	197.40	197.40	76.75	6.47	8.55	5.44	12.00	30.31	10.19	46.11	50.92	160.80	197.40
Runoff (mm)		63	96	42	12	10	9	9	10	9	22	27	87	396
Rainfall (mm)		121	134	33	21	46	64	39	56	52	105	64	131	866

Monthly and yearly statistics for previous record (Sep 1977 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg.	24.380	20.530	24.710	17.570	10.580	7.487	6.095	7.264	6.316	11.470	17.190	23.070	14.706
flows	Low	8.610	10.210	14.090	5.489	4.386	3.945	2.948	3.335	3.093	4.563	4.812	12.780	8.661
(m^3s^{-1})	High	40.980	37.620	64.200	36.800	30.170	14.650	14.010	19.300	12.080	27.060	35.820	50.640	19.785
Peak flow (m^3s^{-1})		309.80	248.20	349.60	277.60	157.60	200.60	226.50	354.40	105.50	273.40	254.10	353.10	354.40
Runoff (mm)		65	50	66	45	28	19	16	19	16	30	44	61	461
Rainfall (mm)		85	56	88	57	61	65	57	81	64	82	88	97	881

Factors affecting flow regime: G
Station type: FV
1990 runoff is 86% of previous mean
rainfall 98%

025001 Tees at Broken Scar 1990

Measuring authority: NRA-N
First year: 1956
Grid reference: 45 (NZ) 259 137
Level stn. (m OD): 37.20
Catchment area (sq km): 818.4
Max alt. (m OD): 893

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	33.770	64.770	19.870	6.163	5.925	5.432	6.389	4.399	6.248	15.350	13.780	40.510	18.267
(m^3s^{-1}):	Peak	325.90	445.20	138.30	19.72	47.12	34.45	92.04	15.45	60.77	123.80	120.50	300.10	445.20
Runoff (mm)		111	191	65	20	19	17	21	14	20	50	44	133	705
Rainfall (mm)		207	236	56	39	48	75	54	56	67	140	78	168	1224

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg	29.410	23.600	23.770	18.620	10.220	6.522	6.784	10.090	11.090	18.110	22.610	28.110	17.394
flows	Low	2.906	2.804	5.482	2.539	2.007	0.502	1.794	0.458	0.638	2.707	4.060	5.778	9.382
(m^3s^{-1})	High	57.570	52.670	68.660	60.870	27.020	15.270	25.090	28.520	25.800	53.940	51.580	50.040	25.160
Peak flow (m^3s^{-1})		590.80	444.80	679.30	350.90	311.50	191.90	380.70	709.80	331.30	525.80	416.30	455.90	709.80
Runoff (mm)		96	70	78	59	33	21	22	33	35	59	72	92	671
Rainfall (mm)		119	85	97	76	78	74	83	101	96	106	112	122	1149

Factors affecting flow regime: SRP
Station type: CC
1990 runoff is 105% of previous mean
rainfall 107%

025019 Leven at Easby 1990

Measuring authority: NRA-N
First year: 1971
Grid reference: 45 (NZ) 585 087
Level stn. (m OD): 101.30
Catchment area (sq km): 14.8
Max alt. (m OD): 335

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.158	0.211	0.110	0.066	0.069	0.085	0.056	0.038	0.039	0.067	0.202	0.457	0.130
(m^3s^{-1}):	Peak	3.56	0.93	0.29	0.09	0.28	1.16	0.12	0.05	0.15	0.33	1.59	4.01	4.01
Runoff (mm)		29	35	20	12	12	15	10	7	7	12	35	83	278
Rainfall (mm)		78	73	19	25	51	103	28	26	53	93	104	123	776

Monthly and yearly statistics for previous record (May 1971 to Dec 1989)

Mean	Avg	0.303	0.290	0.297	0.253	0.177	0.128	0.108	0.130	0.120	0.167	0.193	0.260	0.202
flows	Low	0.082	0.094	0.076	0.085	0.072	0.062	0.044	0.039	0.039	0.049	0.058	0.132	0.083
(m^3s^{-1})	High	0.630	0.729	0.821	0.771	0.544	0.239	0.188	0.427	0.532	0.556	0.507	0.543	0.305
Peak flow (m^3s^{-1})		3.14	4.38	5.68	9.36	7.56	1.99	3.14	15.53	12.83	3.50	4.01	7.66	15.53
Runoff (mm)		55	48	54	44	32	22	20	24	21	30	34	47	430
Rainfall (mm)		78	50	74	58	59	61	63	77	70	77	74	75	816

Factors affecting flow regime: N
Station type: FV
1990 runoff is 64% of previous mean
rainfall 95%

025020 Skerne at Preston le Skerne 1990

Measuring authority: NRA-N
First year: 1972
Grid reference 45 (NZ) 292 238
Level stn. (m OD): 67.50
Catchment area (sq km): 147.0
Max alt. (m OD): 222

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.754	1.122	0.469	0.162	0.168	0.145	0.132	0.077	0.094	0.210	0.302	1.615	0.435
(m^3s^{-1}):	Peak	8.50	8.65	2.44	0.30	0.67	0.61	0.58	0.28	0.97	1.05	1.51	13.96	13.96
Runoff (mm)		14	18	9	3	3	3	2	1	2	4	5	29	93
Rainfall (mm)		69	62	15	12	41	49	29	44	44	84	53	100	602

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg.	1.577	1.214	1.343	0.986	0.677	0.452	0.401	0.400	0.339	0.796	0.869	1.339	0.866
flows	Low	0.337	0.481	0.293	0.247	0.199	0.112	0.121	0.086	0.082	0.099	0.129	0.325	0.268
(m^3s^{-1})	High	3.376	2.731	4.824	2.734	2.106	1.004	1.125	0.943	0.745	4.290	1.962	4.658	1.510
Peak flow (m^3s^{-1})		20.08	12.93	26.58	19.20	11.93	16.54	15.92	13.89	9.33	21.71	17.40	24.82	26.58
Runoff (mm)		29	20	24	17	12	8	7	7	6	14	15	24	186
Rainfall (mm)		58	37	56	45	51	54	49	63	57	58	57	58	643

Factors affecting flow regime: E
Station type: VA
1990 runoff is 50% of previous mean
rainfall 94%

026003 Foston Beck at Foston Mill 1990

Measuring authority: NRA-Y
First year: 1959

Grid reference: 54 (TA) 093 548
Level stn. (m OD): 6.40

Catchment area (sq km): 57.2
Max alt. (m OD): 164

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.113	0.145	0.166	0.217	0.214	0.182	0.144	0.104	0.091	0.077	0.073	0.164	0.141
(m^3s^{-1}):	Peak	0.38	0.45	0.22	0.28	0.29	0.21	0.19	0.13	0.10	0.09	0.12	0.87	0.87
Runoff (mm)		5	6	8	10	10	8	7	5	4	4	3	8	78
Rainfall (mm)		64	62	16	14	38	101	26	36	36	53	62	128	636

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1989)

Mean	Avg.	0.837	1.103	1.073	0.979	0.842	0.655	0.513	0.403	0.330	0.317	0.398	0.558	0.665
flows	Low	0.199	0.183	0.174	0.150	0.174	0.110	0.112	0.105	0.101	0.124	0.117	0.122	0.155
(m^3s^{-1})	High	2.224	2.332	2.242	2.070	1.708	1.231	0.882	0.675	0.567	0.612	1.845	2.379	1.282
Peak flow (m^3s^{-1})		2.89	3.30	2.69	2.70	1.95	2.01	1.47	0.99	0.80	1.22	2.49	2.86	3.30
Runoff (mm)		39	47	50	44	39	30	24	19	15	15	18	26	367
Rainfall (mm)		70	50	58	52	54	52	55	64	57	66	73	74	725

Factors affecting flow regime: N
Station type: TP

1990 runoff is 21% of previous mean rainfall 88%

026005 Gypsey Race at Boynton 1990

Measuring authority: NRA-Y
First year: 1981

Grid reference: 54 (TA) 137 677
Level stn. (m OD): 16.80

Catchment area (sq km): 240.0
Max alt. (m OD): 211

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0.008	0.017	0.006	0.001	0.000	0.000	0.001	0.000	0.000	0.000	0.001	0.035	0.006
(m^3s^{-1}):	Peak	0.03	0.06	0.01	0.00	0.00	0.01	0.01	0.00	0.00	0.00	0.01	0.22	0.22
Runoff (mm)		0	0	0	0	0	0	0	0	0	0	0	0	1
Rainfall (mm)		69	68	16	15	39	114	27	36	36	60	65	119	664

Monthly and yearly statistics for previous record (Feb 1981 to Dec 1989)

Mean	Avg	0.218	0.398	0.429	0.558	0.519	0.317	0.179	0.081	0.037	0.017	0.015	0.037	0.233
flows	Low	0.006	0.005	0.011	0.011	0.003	0.000	0.000	0.000	0.000	0.000	0.000	0.006	0.004
(m^3s^{-1})	High	0.475	0.887	0.872	1.585	1.217	0.623	0.351	0.184	0.098	0.055	0.033	0.082	0.349
Peak flow (m^3s^{-1})		0.72	1.00	1.86	1.87	1.58	0.86	0.60	0.28	0.29	0.14	0.08	0.27	1.87
Runoff (mm)		2	4	5	6	6	3	2	1	0	0	0	0	31
Rainfall (mm)		66	46	79	56	52	45	56	63	58	64	68	61	714

Factors affecting flow regime: G I
Station type: FV

1990 runoff is 2% of previous mean rainfall 93%

027007 Ure at Westwick Lock 1990

Measuring authority: NRA-Y
First year: 1958

Grid reference: 44 (SE) 356 671
Level stn. (m OD): 14.20

Catchment area (sq km): 914.6
Max alt. (m OD): 713

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	51.440	76.330	23.460	7.452	4.761	3.047	6.967	2.305	3.338	18.350	17.420	41.660	21.074
(m^3s^{-1})	Peak	223.20	307.70	112.00	19.29	21.48	4.89	85.76	10.48	20.41	98.56	157.60	192.80	307.70
Runoff (mm)		151	202	69	21	14	9	20	7	9	54	49	122	727
Rainfall (mm)		207	239	39	34	36	69	45	52	53	125	68	176	1143

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1989—incomplete or missing months total 0.5 years)

Mean	Avg	33.420	28.770	27.570	20.500	12.790	8.630	8.013	11.840	13.670	21.960	28.460	32.710	20.685
flows	Low	4.009	3.886	10.250	5.674	3.831	3.024	2.202	1.287	1.450	5.856	7.078	11.330	12.946
(m^3s^{-1})	High	59.590	84.770	60.330	40.980	29.500	21.400	20.130	31.600	33.030	68.480	65.010	57.370	27.066
Peak flow (m^3s^{-1})		537.90	307.30	413.10	263.30	170.80	161.50	153.30	271.90	296.20	266.50	288.80	304.10	537.90
Runoff (mm)		98	77	81	58	37	24	23	35	39	64	81	96	713
Rainfall (mm)		119	82	98	78	73	71	76	91	94	107	119	125	1133

Factors affecting flow regime: S P
Station type: B VA

1990 runoff is 102% of previous mean rainfall 101%

027025 Rother at Woodhouse Mill 1990

Measuring authority: NRA-Y
First year: 1961

Grid reference: 43 (SK) 432 857
Level stn. (m OD): 28.70

Catchment area (sq km): 352.2
Max alt. (m OD): 367

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.708	10.360	3.638	1.646	1.258	1.558	1.243	1.260	1.134	2.701	2.260	8.409	3.564
(m^3s^{-1})	Peak	56.66	46.63	16.79	3.80	3.93	8.18	6.76	10.26	4.51	35.58	6.87	43.67	56.66
Runoff (mm)		59	71	28	12	10	11	9	10	8	21	17	64	319
Rainfall (mm)		105	102	17	18	19	66	24	35	28	120	47	109	690

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989—incomplete or missing months total 2.5 years)

Mean	Avg	6.865	6.759	6.442	5.379	3.810	2.967	1.894	2.010	2.134	2.869	4.512	6.215	4.318
flows	Low	1.287	1.424	1.830	1.400	1.569	1.166	0.934	0.760	0.712	0.693	1.023	2.393	2.540
(m^3s^{-1})	High	13.000	22.440	14.330	13.160	10.110	10.840	4.907	3.323	7.786	7.600	8.200	18.140	6.364
Peak flow (m^3s^{-1})		60.30	78.80	53.21	78.14	61.40	105.40	45.63	33.55	45.59	41.74	50.55	91.46	105.40
Runoff (mm)		52	47	49	40	29	22	15	15	16	22	33	47	387
Rainfall (mm)		70	58	69	64	63	65	54	63	62	63	73	76	780

Factors affecting flow regime: SRPGEI
Station type: VA

1990 runoff is 82% of previous mean rainfall 88%

027030 Dearne at Adwick 1990

Measuring authority: NRA-Y
First year: 1963
Grid reference: 44 (SE) 477 020
Level stn. (m OD): 12.70
Catchment area (sq km): 310 8
Max alt. (m OD): 381

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.796	6.737	3 248	1.756	1.367	1.332	1 096	0.949	0 942	2 008	1 475	4 665	2.594
(m^3s^{-1}):	Peak	39.79	23 69	13 02	3.93	2 62	4 99	3.63	2.77	2.14	19.25	2.60	27 67	39.79
Runoff (mm)		50	52	28	15	12	11	9	8	8	17	12	40	263
Rainfall (mm)		104	94	16	28	16	50	25	30	23	114	36	102	638

Monthly and yearly statistics for previous record (Nov 1983 to Dec 1989—incomplete or missing months total 0.7 years)

Mean	Avg	4.908	5.290	4.793	4.298	3 043	2.603	1.922	1 897	1.862	2.446	3 475	4 364	3.398
flows	Low	1.678	1.648	1 433	1.223	1.303	1.106	0 806	0.765	0 873	0 922	1.029	1.245	2.104
(m^3s^{-1})	High	9.214	14.340	10.750	8 866	7.380	7.299	3 699	3 054	5 658	5.171	7 632	10 980	5.264
Peak flow (m^3s^{-1})		51.76	56.32	41 85	58 42	43.97	55 58	31.94	27.40	28 97	26 56	51.52	56 65	58.42
Runoff (mm)		42	42	41	36	26	22	17	16	16	21	29	38	345
Rainfall (mm)		63	53	62	58	58	58	50	63	56	58	70	68	717

Factors affecting flow regime: PGEI
Station type: C VA

1990 runoff is 76% of previous mean
rainfall 89%

027042 Dove at Kirkby Mills 1990

Measuring authority: NRA-Y
First year: 1972
Grid reference: 44 (SE) 705 855
Level stn. (m OD): 35.60
Catchment area (sq km): 59.2
Max alt. (m OD): 433

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 387	1.592	0.797	0 386	0.329	0.444	0 305	0.176	0.190	0 584	1 212	2 533	0.825
(m^3s^{-1}):	Peak	27 02	8.96	1.92	0.54	0 88	6 94	1 31	0 45	0 72	4.74	7.55	18 78	27.02
Runoff (mm)		63	65	36	17	15	19	14	8	8	26	53	115	439
Rainfall (mm)		105	84	20	23	36	93	31	45	63	95	92	122	809

Monthly and yearly statistics for previous record (Feb 1972 to Dec 1989)

Mean	Avg	1.678	1 588	1.696	1.243	0.828	0.626	0 526	0.574	0.656	1 012	1 149	1 593	1.096
flows	Low	0.589	0.541	0.347	0 376	0.368	0 279	0 211	0.161	0 186	0 251	0.499	0 853	0.576
(m^3s^{-1})	High	2.861	3.180	4 701	2.915	.1.702	1 099	1 021	1 397	2.743	2.683	2.032	3 237	1.554
Peak flow (m^3s^{-1})		37.45	36.68	40 93	27.63	30.01	7.43	19.33	32.36	56.38	24.71	23 85	53 38	56.38
Runoff (mm)		76	66	77	54	37	27	24	26	29	46	50	72	584
Rainfall (mm)		94	61	90	62	66	64	71	77	82	92	84	94	937

Factors affecting flow regime: N
Station type: FV

1990 runoff is 75% of previous mean
rainfall 86%

027043 Wharfe at Addingham 1990

Measuring authority: NRA-Y
First year: 1974
Grid reference: 44 (SE) 092 494
Level stn. (m OD): 79.70
Catchment area (sq km): 427 0
Max alt. (m OD): 704

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	33.790	37.770	12 650	4 427	4.069	2 596	6.180	2.758	3 467	17 570	14 130	24 650	13.556
(m^3s^{-1}):	Peak	212 30	218 70	69.59	21.88	30 23	9.73	108 70	29 27	55 63	102.90	214 60	159 90	218.70
Runoff (mm)		212	214	79	27	26	16	39	17	21	110	86	155	1001
Rainfall (mm)		263	262	70	58	49	84	67	89	77	182	109	181	1491

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg.	24.810	16 830	21.050	10 400	7 022	5.172	4 865	9 036	12 470	17 950	21 300	24 270	14.604
flows	Low	10 840	5 157	6.391	2 453	1 623	1 722	1.245	1 143	2 359	6.422	8 263	5 972	10.487
(m^3s^{-1})	High	33.340	28 410	52.490	21.970	16 100	10.320	12.730	26 270	23.450	37 310	32 450	44 680	19.543
Peak flow (m^3s^{-1})		509 00	342.00	552 60	205 10	100.90	114.70	163 80	273.80	244.90	370 00	400 00	320 30	552.60
Runoff (mm)		156	97	132	63	44	31	31	57	76	113	129	152	1080
Rainfall (mm)		159	91	137	73	76	82	82	117	128	145	144	171	1405

Factors affecting flow regime: S P
Station type: C VA

1990 runoff is 93% of previous mean
rainfall 106%

027059 Laver at Ripon 1990

Measuring authority: NRA-Y
First year: 1977
Grid reference: 44 (SE) 301 710
Level stn. (m OD): 29.60
Catchment area (sq km): 87.5
Max alt. (m OD): 406

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2 324	3.420	1 012	0 396	0.214	0.165	0 141	0 065	0 061	0 289	0.252	1 641	0.817
(m^3s^{-1}):	Peak	22.17	21.34	3.94	0 58	0 42	0.46	0 47	0 16	0.28	1 99	1 66	8 79	22.17
Runoff (mm)		71	95	31	12	7	5	4	2	2	9	7	50	294
Rainfall (mm)		149	161	28	18	24	73	30	46	44	92	38	123	826

Monthly and yearly statistics for previous record (Nov 1977 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	1.978	1 602	1.790	1.326	0 756	0.505	0.287	0 419	0 326	0.776	1 232	1 908	1.074
flows	Low	0.471	0 659	0 721	0.453	0 272	0 233	0 098	0 096	0 073	0.167	0 324	0 848	0.668
(m^3s^{-1})	High	3 265	3.090	3.850	3 063	1.881	1.264	0 696	0.952	0.618	1 736	2 400	3 786	1.211
Peak flow (m^3s^{-1})		24.06	18.75	22.65	36.95	13.32	16.75	11 26	11.48	10.21	17.08	15.01	39.14	39.14
Runoff (mm)		61	45	55	39	23	15	9	13	10	24	37	58	388
Rainfall (mm)*		100	62	100	65	60	66	54	84	67	93	93	116	960

*(1978-1989)

Factors affecting flow regime: S P
Station type: C

1990 runoff is 76% of previous mean
rainfall 86%

027071 Swale at Crakehill 1990

Measuring authority: NRA-Y
First year: 1955

Grid reference: 44 (SE) 425 734
Level stn. (m OD): 12.00

Catchment area (sq km): 1363.0
Max alt. (m OD): 713

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	36 940	59 830	17.810	7.120	4 584	3 960	5 187	2 636	3.000	12.100	11.830	37 520	16.637
(m^3s^{-1}):	Peak	166 00	192.90	64 89	12.51	10.17	9 56	38.79	7.59	8 12	52 42	77.33	125 00	192.90
Runoff (mm)		73	106	35	14	9	8	10	5	6	24	23	74	385
Rainfall (mm)		131	140	22	21	32	78	34	55	43	84	48	136	824

Monthly and yearly statistics for previous record (Nov 1955 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	32 710	27.990	26 510	19.690	13.310	9 639	8.823	12 430	11.830	19.100	23.610	29 130	19.537
flows	Low	6 906	5.465	7.465	7.367	5.557	3.739	2 712	1.959	2 082	4 270	7.131	9 007	11.155
(m^3s^{-1})	High	56 800	64 050	71 680	46.690	32.370	23 110	21 790	50 310	33.140	53.710	52 200	62.830	26.045
Peak flow (m^3s^{-1})		230 70	191.10	255.70	183 30	165.90	129.80	136 50	199 80	175 10	232.70	197.90	207 50	255.70
Runoff (mm)		64	50	52	37	26	18	17	24	22	38	45	57	452
Rainfall (mm)		84	59	68	57	58	62	68	84	71	75	79	85	850

Factors affecting flow regime: N
Station type: C VA

1990 runoff is 85% of previous mean
rainfall 97%

028018 Dove at Marston on Dove 1990

Measuring authority: NRA-ST
First year: 1961

Grid reference: 43 (SK) 235 288
Level stn. (m OD): 47 20

Catchment area (sq km): 883.2
Max alt. (m OD): 555

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	22 580	28 320	13.460	7.842	5 090	5.161	4 365	3.256	3 842	7 108	15 020	18 460	11.104
(m^3s^{-1}):	Peak	123 40	115.40	81.21	13 49	6 90	9 06	7 98	7 41	16 80	63.30	63.61	64.66	123.40
Runoff (mm)		68	78	41	23	15	15	13	10	11	22	44	56	396
Rainfall (mm)		123	119	30	44	28	92	40	53	85	125	68	104	911

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	22.390	19 670	17 940	14.790	11 820	9 038	7 548	7 733	8.317	10.950	16 330	21 280	13.962
flows	Low	7.822	4.615	8 943	6.195	4.831	3 452	2 430	1.913	2 821	3 495	5 684	7.907	7.723
(m^3s^{-1})	High	32.880	55.910	36 570	24.550	22 480	16.280	15 530	14 630	29.350	22.830	31 070	56 460	19.411
Peak flow (m^3s^{-1})		191 40	194.60	129 70	121 00	121.40	73 02	77.10	113 60	113.90	132.10	130.80	202.80	202.80
Runoff (mm)		68	54	54	43	36	27	23	23	24	33	48	65	499
Rainfall (mm)		91	67	80	67	74	76	66	81	78	82	94	95	951

Factors affecting flow regime: SRPG
Station type: FV

1990 runoff is 79% of previous mean
rainfall 96%

028024 Wreake at Syston Mill 1990

Measuring authority: NRA-ST
First year: 1967

Grid reference: 43 (SK) 615 124
Level stn. (m OD): 47.70

Catchment area (sq km): 413.8
Max alt. (m OD): 230

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4 299	8 816	2 466	0.903	0 607	0 705	0 497	0 479	0 411	0 600	0 918	1 879	1.837
(m^3s^{-1})	Peak	15 86	34 03	17 71	1 96	1 44	4.37	1 27	2 62	0 69	1 79	4.33	8 72	34.03
Runoff (mm)		28	52	16	6	4	4	3	3	3	4	6	12	140
Rainfall (mm)		57	86	16	27	14	47	29	40	25	68	55	53	517

Monthly and yearly statistics for previous record (Aug 1967 to Dec 1989—incomplete or missing months total 1 6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	5 686	5.920	4 918	3 683	2.210	1 173	0.928	0.845	0 773	1.379	2 414	4.395	2.847
flows	Low	0 959	0 619	0 494	0 358	0.286	0 222	0 137	0.122	0 254	0 264	0 418	0 745	0.923
(m^3s^{-1})	High	10 150	21 740	12.630	8 772	8.117	2.776	4 547	3.230	5 367	6.897	7 087	11 850	4.398
Peak flow (m^3s^{-1})		43.11	73 37	99 82	97.07	51 83	39 17	26 88	30 44	21.61	31 68	50 25	52.95	99.82
Runoff (mm)		37	35	32	23	14	7	6	5	5	9	15	28	217
Rainfall (mm)*		54	44	55	48	53	61	46	60	51	53	50	58	633

*(1971-1989)

Factors affecting flow regime: GE
Station type: C VA

1990 runoff is 64% of previous mean
rainfall 82%

028026 Anker at Polesworth 1990

Measuring authority: NRA-ST
First year: 1966

Grid reference: 43 (SK) 263 034
Level stn. (m OD): 60 40

Catchment area (sq km): 368 0
Max alt. (m OD): 278

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.739	9 110	2.276	1.348	0 992	0 960	0.789	0 723	0.729	1.360	1 481	4 929	2.498
(m^3s^{-1}):	Peak	27 80	46 63	12 40	2.39	2.92	2 68	2.56	2.89	1 40	5 55	9.24	27 37	46.63
Runoff (mm)		42	60	17	10	7	7	6	5	5	10	10	36	214
Rainfall (mm)		78	86	15	25	16	48	26	32	32	87	53	68	566

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1989—incomplete or missing months total 2.6 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	5.143	5.304	4.329	2 947	2.373	1 840	1.358	1.397	1 259	1.907	2.565	4 119	2.868
flows	Low	1.298	0 953	0 650	0 657	0.686	0 484	0 343	0.405	0 711	0 728	0 855	1 175	1.213
(m^3s^{-1})	High	9 572	16 200	9.233	6 629	8.389	4 650	5.580	4 173	3 274	4.611	5.537	9 473	3.724
Peak flow (m^3s^{-1})		75 63	73 18	56.09	45 84	59.77	52 68	59 34	45.03	31.34	36.25	45.77	74 01	75 63
Runoff (mm)		37	35	32	21	17	13	10	10	9	14	18	30	246
Rainfall (mm)*		56	51	57	44	53	63	46	57	58	53	51	62	651

*(1971-1989)

Factors affecting flow regime: GE
Station type: C VA

1990 runoff is 87% of previous mean
rainfall 87%

028031 Manifold at Ilam 1990

Measuring authority: NRA-ST
First year: 1968
Grid reference: 43 (SK) 140 507
Level stn. (m OD): 131.00
Catchment area (sq km): 148 5
Max alt. (m OD): 513

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	6.413	7 402	3.167	1 600	0.946	1.063	1 007	0 580	0 819	2.713	4 885	5 366	2.971
(m^3s^{-1}):	Peak	51.08	34.26	10 28	3.54	1.33	2.65	2.28	1 62	7.88	39.81	22.64	30 07	51.08
Runoff (mm)		116	121	57	28	17	19	18	10	14	49	85	97	631
Rainfall (mm)		149	136	40	56	32	105	44	64	100	145	79	123	1073

Monthly and yearly statistics for previous record (May 1968 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	8.215	5 092	5 090	3 821	2.472	1.928	1.559	1.865	1.813	3 025	4 898	5.318	3 585
flows	Low	2.561	2.489	2.528	1 277	0 812	0 745	0 493	0 386	0 458	0.716	1 555	2 135	2.241
(m^3s^{-1})	High	8.522	12.710	9.455	6.200	5.713	5.150	3.505	4.560	4 147	6 697	8.198	9.995	4.806
Peak flow (m^3s^{-1})		80 13	74 53	66 72	47.36	52.40	39.58	37.29	137.00	45 89	75.78	91.61	66 25	137.00
Runoff (mm)		112	84	92	67	45	34	28	34	32	55	85	96	762
Rainfall (mm)*		120	83	101	74	75	81	72	80	83	97	117	112	1095

*(1969-1989)

Factors affecting flow regime: P E
Station type: C

1990 runoff is 83% of previous mean
rainfall 98%

028039 Rea at Calthorpe Park 1990

Measuring authority: NRA-ST
First year: 1967
Grid reference: 42 (SP) 071 847
Level stn. (m OD): 104.20
Catchment area (sq km): 74 0
Max alt. (m OD): 291

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.288	1.758	0 475	0.432	0.319	0 504	0 324	0 356	0 320	0 799.	0 609	1.121	0 686
(m^3s^{-1}):	Peak	14 44	20 08	3 20	2 98	3 63	7 06	3.53	7 46	2.51	19 45	11 22	21 61	21.61
Runoff (mm)		47	57	17	15	12	18	12	13	11	29	21	41	292
Rainfall (mm)		107	107	18	31	13	68	25	40	32	98	47	75	659

Monthly and yearly statistics for previous record (May 1967 to Dec 1989—incomplete or missing months total 1.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	1.178	1 038	1.047	0.818	0 748	0 669	0 529	0 652	0 621	0.677	0.859	1.109	0.828
flows	Low	0 483	0.549	0.483	0.316	0.355	0.287	0.257	0 367	0.295	0 320	0 493	0 490	0.602
(m^3s^{-1})	High	1.985	2.610	2.101	1.489	1.780	1.324	1.018	1.366	1.423	1.408	1.753	1.934	1.058
Peak flow (m^3s^{-1})		36 71	27 44	28 64	25.15	30 37	37 44	46 86	46.38	40 85	24 68	24 97	54 02	54.02
Runoff (mm)		43	34	38	29	27	23	19	24	22	25	30	40	353
Rainfall (mm)*		75	59	69	58	67	64	56	73	67	63	71	79	801

*(1968-1989)

Factors affecting flow regime: E
Station type: C

1990 runoff is 83% of previous mean
rainfall 82%

028067 Derwent at Church Wilne 1990

Measuring authority: NRA-ST
First year: 1973
Grid reference: 43 (SK) 438 316
Level stn. (m OD): 31.00
Catchment area (sq km): 1177 5
Max alt. (m OD): 636

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	28.240	45.580	21.430	10 480	6 651	6.495	5 647	4 955	5 118	8 032	13 320	27 600	15 117
(m^3s^{-1}).	Peak	117.30	145.60	64.80	17.33	12 28	16 16	10.98	16.94	10 66	23.50	26 37	93 12	145.60
Runoff (mm)		64	94	49	23	15	14	13	11	11	18	29	63	405
Rainfall (mm)		135	134	33	41	25	89	35	57	58	138	71	134	950

Monthly and yearly statistics for previous record (May 1973 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	34 440	32.180	30 190	23 100	14.850	11.840	9 082	8 474	8 526	14 100	19 220	27 530	19 407
flows	Low	13 270	13.050	10 210	7 891	7.025	5.411	4.445	3.965	4.429	4 933	5 152	9.272	10.267
(m^3s^{-1})	High	52 530	81.270	59.290	40.240	28.060	23.060	22.050	16 600	14 200	31.970	35 860	46 890	25.542
Peak flow (m^3s^{-1})		194.10	215.70	173 60	158 40	142 20	118 70	156 20	153 60	71 96	146 50	94 65	214 70	215.70
Runoff (mm)		78	67	69	51	34	26	21	19	19	32	42	63	520
Rainfall (mm)		110	77	98	65	67	77	62	76	81	94	92	108	1007

Factors affecting flow regime: S P EI
Station type: FVVA

1990 runoff is 78% of previous mean
rainfall 94%

028080 Tame at Lea Marston Lakes 1990

Measuring authority: NRA-ST
First year: 1957
Grid reference: 42 (SP) 207 937
Level stn. (m OD): 66.20
Catchment area (sq km): 799 0
Max alt. (m OD): 267

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	20 650	28 380	11 600	9 835	8.549	9 807	8 225	8 120	7.855	10 900	10 090	16 090	12.412
(m^3s^{-1}):	Peak	76.86	133.40	30 53	25 68	32 41	40 29	25 15	37 05	21.18	56 67	59 60	63 79	133.40
Runoff (mm)		69	86	39	32	29	32	28	27	25	37	33	54	490
Rainfall (mm)		94	101	15	28	15	59	26	35	35	82	45	72	607

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	17.610	16.880	15.630	14 000	12 530	11 480	10 380	11 040	11 090	12 100	14.260	16 770	13 633
flows	Low	8.994	8.855	8.797	7.259	7.321	6.655	6.369	6.978	6 655	7 852	7.876	9 057	9.699
(m^3s^{-1})	High	26.700	35.140	28.590	22 000	24.690	18.990	17.210	16.970	19 440	25.600	27.880	32.880	17.355
Peak flow (m^3s^{-1})		122.20	94 05	86 27	110 80	121 60	159.70	94 78	153 20	92 33	76 24	127 60	219 20	219.20
Runoff (mm)		59	52	52	45	42	37	35	37	36	41	46	56	538
Rainfall (mm)		65	49	58	54	59	59	58	71	62	60	65	73	729

Factors affecting flow regime: EI
Station type: C

1990 runoff is 91% of previous mean
rainfall 83%

028082 Soar at Littlethorpe 1990

Measuring authority: NRA-ST
First year: 1971
Grid reference: 42 (SP) 542 973
Level stn. (m OD): 61.40
Catchment area (sq km): 183.9
Max alt. (m OD): 151

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	2.378	3.864	0.968	0.568	0.405	0.403	0.297	0.323	0.341	0.539	0.641	1.362	**0.990**
	Peak	8.69	17.48	4.24	0.98	1.15	1.06	0.70	1.18	0.68	1.90	2.85	6.01	**17.48**
Runoff (mm)		35	51	14	8	6	6	4	5	5	8	9	20	**170**
Rainfall (mm)		71	80	16	26	14	47	23	29	28	84	50	66	**534**

Monthly and yearly statistics for previous record (Aug 1971 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	2.679	2.631	2.382	1.620	1.077	0.966	0.545	0.684	0.552	0.906	1.289	2.367	**1.470**
	Low	0.713	0.568	0.424	0.346	0.350	0.245	0.164	0.224	0.307	0.338	0.398	0.643	**0.644**
	High	4.661	6.868	5.031	3.105	2.654	2.346	1.447	2.242	1.608	2.921	2.714	5.101	**2.133**
Peak flow (m^3s^{-1})		23.49	24.47	20.78	21.18	14.93	15.78	13.71	20.41	15.94	19.81	16.59	22.46	**24.47**
Runoff (mm)		39	35	35	23	16	14	8	10	8	13	18	34	**252**
Rainfall (mm)*		54	45	54	44	54	65	45	61	52	53	51	63	**641**

*(1972-1989)

Factors affecting flow regime: E
Station type: EM

1990 runoff is 67% of previous mean rainfall 83%

029003 Lud at Louth 1990

Measuring authority: NRA-A
First year: 1968
Grid reference: 53 (TF) 337 879
Level stn. (m OD): 15.40
Catchment area (sq km): 55.2
Max alt. (m OD): 149

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	0.248	0.472	0.436	0.311	0.239	0.229	0.187	0.171	0.161	0.161	0.154	0.154	**0.242**
	Peak	1.56	1.40	0.70	0.71	0.60	1.09	0.23	0.78	0.80	0.52	0.37	0.43	**1.56**
Runoff (mm)		12	21	21	15	12	11	9	8	8	8	7	7	**138**
Rainfall (mm)		62	73	18	20	36	68	17	35	41	40	50	49	**509**

Monthly and yearly statistics for previous record (Aug 1968 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	0.642	0.805	0.766	0.710	0.577	0.444	0.343	0.286	0.244	0.252	0.315	0.409	**0.481**
	Low	0.139	0.157	0.162	0.150	0.156	0.131	0.112	0.102	0.112	0.127	0.125	0.125	**0.178**
	High	1.279	1.428	1.338	1.289	1.177	0.687	0.507	0.414	0.625	0.719	1.158	0.911	**0.703**
Peak flow (m^3s^{-1})		3.70	3.81	3.58	5.06	3.51	3.27	3.40	3.10	3.30	2.96	6.77	3.10	**6.77**
Runoff (mm)		31	36	37	33	28	21	17	14	11	12	15	20	**275**
Rainfall (mm)		66	46	65	52	54	58	51	62	52	57	67	65	**695**

Factors affecting flow regime: G
Station type: C

1990 runoff is 50% of previous mean rainfall 73%

030004 Partney Lymn at Partney Mill 1990

Measuring authority: NRA-A
First year: 1962
Grid reference: 53 (TF) 402 676
Level stn. (m OD): 14.90
Catchment area (sq km): 61.6
Max alt. (m OD): 142

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	0.465	0.680	0.345	0.222	0.196	0.172	0.124	0.121	0.121	0.156	0.207	0.236	**0.251**
	Peak	2.41	3.22	0.98	0.39	0.45	0.28	0.25	0.46	0.21	0.45	0.55	0.64	**3.22**
Runoff (mm)		20	27	15	9	9	7	5	5	5	7	9	10	**129**
Rainfall (mm)		56	68	17	20	32	59	21	46	35	56	50	49	**509**

Monthly and yearly statistics for previous record (Jun 1962 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	0.852	0.770	0.726	0.626	0.461	0.327	0.275	0.288	0.284	0.394	0.545	0.722	**0.522**
	Low	0.351	0.300	0.276	0.228	0.200	0.116	0.088	0.107	0.151	0.190	0.193	0.210	**0.292**
	High	1.574	1.838	1.538	1.518	0.886	0.691	0.862	0.593	0.917	1.144	1.112	1.804	**0.754**
Peak flow (m^3s^{-1})		10.01	12.59	7.71	13.34	11.30	8.13	13.38	7.06	6.64	8.07	10.17	8.48	**13.38**
Runoff (mm)		37	31	32	26	20	14	12	13	12	17	23	31	**267**
Rainfall (mm)		61	47	62	54	57	57	53	65	52	53	69	63	**693**

Factors affecting flow regime: P I
Station type: C

1990 runoff is 48% of previous mean rainfall 73%

031002 Glen at Kates Brdg and King St Brdg 1990

Measuring authority: NRA-A
First year: 1960
Grid reference: 53 (TF) 106 149
Level stn. (m OD): 6.10
Catchment area (sq km): 341.9
Max alt. (m OD): 129

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	0.615	2.428	1.407	0.681	0.291	0.156	0.061	0.034	0.021	0.018	0.016	0.025	**0.465**
	Peak													
Runoff (mm)		5	17	11	5	2	1	0	0	0	0	0	0	**43**
Rainfall (mm)		49	81	15	24	11	50	29	43	23	55	54	41	**475**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	2.076	2.453	2.341	1.933	1.450	0.781	0.429	0.363	0.311	0.517	0.820	1.404	**1.234**
	Low	0.093	0.048	0.033	0.018	0.008	0.004	0.000	0.001	0.008	0.024	0.020	0.078	**0.154**
	High	6.351	10.110	6.317	4.903	5.060	2.182	1.465	1.615	1.873	2.810	5.552	7.868	**2.333**
Peak flow (m^3s^{-1})														
Runoff (mm)		16	17	18	15	11	6	3	3	2	4	6	11	**114**
Rainfall (mm)		52	40	50	53	53	54	48	62	50	50	55	56	**623**

Factors affecting flow regime: G I
Station type: FV FL

1990 runoff is 38% of previous mean rainfall 76%

031007 Welland at Barrowden 1990

Measuring authority: NRA-A
First year: 1968
Grid reference: 42 (SP) 948 999
Level stn (m OD): 34.90
Catchment area (sq km): 411.6
Max alt. (m OD): 230

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3 838	8 128	2 009	0 720	0.367	0.317	0.214	0 181	0 195	0 306	0 401	0 587	1.395
(m^3s^{-1}):	Peak	13.78	32.75	8.74	1.36	0 53	0 58	0 53	0 61	0 35	0 77	1 25	1 50	32.75
Runoff (mm)		25	48	13	5	2	2	1	1	1	2	3	4	107
Rainfall (mm)		60	84	16	33	6	39	30	23	29	67	54	49	490

Monthly and yearly statistics for previous record (Feb 1968 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg.	4.916	4 930	4 360	3.181	1.715	1 148	0 780	0 789	0 657	1 258	2 039	3 663	2.442
flows	Low	0 516	0.425	0.352	0 257	0 232	0 159	0 092	0 154	0 271	0.226	0 318	0.410	1.034
(m^3s^{-1})	High	10 300	17.030	9 701	7.700	7 310	3 093	4 477	4.500	4 322	5 150	6 436	7 509	3.667
Peak flow (m^3s^{-1})		58.91	74 42	107 80	79 43	46 95	27 44	38 23	39.91	12 55	22.87	50 37	40 13	107.80
Runoff (mm)		32	29	28	20	11	7	5	5	4	8	13	24	187
Rainfall (mm)		57	43	54	49	55	58	52	65	49	51	57	59	649

Factors affecting flow regime: S EI
Station type C

1990 runoff is 57% of previous mean
rainfall 76%

032003 Harpers Brook at Old Mill Bridge 1990

Measuring authority: NRA-A
First year: 1938
Grid reference 42 (SP) 983 799
Level stn (m OD): 30.30
Catchment area (sq km): 74.3
Max alt. (m OD): 146

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.534	1 198	0 226	0 180	0 111	0 093	0 073	0 061	0 062	0 081	0 089	0.125	0.230
(m^3s^{-1}):	Peak	1.97	6.38	0 46	0 88	0 17	0 29	0.26	0 17	0 14	0.40	0 63	0 48	6.38
Runoff (mm)		19	39	8	6	4	3	3	2	2	3	3	5	97
Rainfall (mm)		55	79	15	42	7	36	33	19	31	59	51	49	476

Monthly and yearly statistics for previous record (Dec 1938 to Dec 1989—incomplete or missing months total 0.6 years)

Mean	Avg	0.783	0 800	0 717	0 499	0 311	0 200	0 147	0.153	0 143	0 215	0.425	0 591	0.414
flows	Low	0 097	0 080	0 076	0 066	0 056	0 049	0 052	0 048	0 049	0 057	0 069	0 077	0 159
(m^3s^{-1})	High	2.766	2 485	2 363	1 334	1 246	0 606	0 685	0 791	1 147	1 176	1 688	1 762	0.676
Peak flow (m^3s^{-1})		16 06	18 58	17 01	22 00	18 65	10 54	12.49	20 50	6 80	16 58	11 74	17 90	22.00
Runoff (mm)		28	26	26	17	11	7	5	6	5	8	15	21	176
Rainfall (mm)		58	41	49	45	52	52	52	63	49	53	60	57	631

Factors affecting flow regime N
Station type CC

1990 runoff is 55% of previous mean
rainfall 75%

033012 Kym at Meagre Farm 1990

Measuring authority NRA-A
First year: 1960
Grid reference: 52 (TL) 155 631
Level stn. (m OD) 17.20
Catchment area (sq km): 137.5
Max alt. (m OD): 101

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	0 877	2.565	0 312	0 115	0 044	0 036	0.025	0 026	0 020	0 031	0 040	0 059	0 331
(m^3s^{-1}):	Peak	7 88	20 10	2.60	0 53	0 08	0 08	0 06	0 05	0 03	0 06	0 09	0 17	20.10
Runoff (mm)		17	45	6	2	1	1	0	1	0	1	1	1	76
Rainfall (mm)		49	82	14	41	5	42	22	17	23	41	39	47	422

Monthly and yearly statistics for previous record (May 1960 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg	1.381	1 352	1 182	0 824	0 371	0 235	0 138	0 104	0 055	0 406	0 633	1 012	0.638
flows	Low	0 074	0 047	0 044	0 041	0.024	0 009	0 001	0 004	0 017	0 015	0 022	0 050	0.103
(m^3s^{-1})	High	3 296	5 577	3 474	2.107	1 469	1 489	2 438	1 096	0 158	3 515	3 718	3 328	1.048
Peak flow (m^3s^{-1})		25 26	22 70	30 24	30 75	20 61	24 10	16 68	23 42	2.10	25 91	34.71	33 98	34.71
Runoff (mm)		27	24	23	16	7	4	3	2	1	8	12	20	148
Rainfall (mm)		49	38	48	49	53	58	50	57	47	52	53	57	611

Factors affecting flow regime: EI
Station type: CB

1990 runoff is 52% of previous mean
rainfall 69%

033013 Sapiston at Rectory Bridge 1990

Measuring authority: NRA-A
First year: 1949
Grid reference: 52 (TL) 896 791
Level stn. (m OD) 15 60
Catchment area (sq km): 205 9
Max alt. (m OD): 97

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 460	1 357	0 625	0 444	0 283	0 186	0 097	0 067	0 044	0 080	0 118	0 132	0.317
(m^3s^{-1}):	Peak	1.57	5 41	1 60	0 67	0 42	0 23	0 14	0 08	0 33	0.38	0.37	1.20	5.41
Runoff (mm)		6	16	8	6	4	2	1	1	1	1	1	2	49
Rainfall (mm)		52	73	20	42	18	39	19	27	34	55	64	41	484

Monthly and yearly statistics for previous record (Jan 1949 to Dec 1989—incomplete or missing months total 2.8 years)

Mean	Avg	1 237	1 226	1 062	0 821	0 611	0 467	0 324	0 300	0 295	0 408	0 618	0 851	0.682
flows	Low	0 226	0 221	0.150	0 079	0 193	0 133	0 015	0 045	0 051	0 066	0 087	0 139	0.219
(m^3s^{-1})	High	3 511	3 295	2.491	1 947	1 802	1 744	0 651	1 441	1 682	2.922	2 404	2 396	1.141
Peak flow (m^3s^{-1})		11.00	10 90	10.85	8 76	7 31	5 20	2 39	10 59	8 95	12 60	6 97	10 45	12.60
Runoff (mm)		16	15	14	10	8	6	4	4	4	5	8	11	105
Rainfall (mm)*		52	35	45	45	47	52	51	52	52	57	60	56	604

*(1960-1989)

Factors affecting flow regime GEI
Station type: TP

1990 runoff is 46% of previous mean
rainfall 80%

033024 Cam at Dernford 1990

Measuring authority: NRA-A
First year: 1949
Grid reference: 52 (TL) 466 506
Level stn. (m OD): 14.70
Catchment area (sq km): 198.0
Max alt. (m OD): 146

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	1.010	2.156	1.089	0.907	0.638	0.491	0.361	0.309	0.302	0.339	0.312	0.313	**0.675**
	Peak	3.82	10.95	1.91	1.36	0.79	0.83	0.58	0.41	0.40	0.42	0.53	0.52	**10.95**
Runoff (mm)		14	26	15	12	9	6	5	4	4	5	4	4	**108**
Rainfall (mm)		61	78	18	37	9	36	14	30	34	41	37	57	**452**

Monthly and yearly statistics for previous record (Mar 1949 to Dec 1989—incomplete or missing months total 1.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	1.457	1.485	1.366	1.208	0.991	0.787	0.638	0.605	0.576	0.756	0.952	1.181	**0.998**
	Low	0.449	0.400	0.562	0.465	0.408	0.318	0.184	0.248	0.155	0.313	0.361	0.356	**0.416**
	High	3.592	2.703	2.608	2.431	2.144	1.338	1.608	1.542	1.965	2.970	2.790	3.492	**1.508**
Peak flow (m^3s^{-1})		13.30	14.09	10.22	9.94	13.63	6.94	5.28	10.70	10.99	12.70	12.50	12.06	**14.09**
Runoff (mm)		20	18	18	16	13	10	9	8	8	10	12	16	**159**
Rainfall (mm)*		49	38	43	41	47	50	54	59	52	54	58	55	**600**

*(1950-1989)

Factors affecting flow regime: GEI
Station type: TP

1990 runoff is 68% of previous mean
rainfall 75%

033032 Heacham at Heacham 1990

Measuring authority: NRA-A
First year: 1965
Grid reference: 53 (TF) 685 375
Level stn. (m OD): 9.40
Catchment area (sq km): 59.0
Max alt. (m OD): 88

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg.	0.058	0.075	0.099	0.113	0.101	0.083	0.066	0.048	0.039	0.035	0.039	0.030	**0.066**
	Peak	0.07	0.11	0.14	0.13	0.14	0.10	0.10	0.08	0.05	0.06	0.08	0.05	**0.14**
Runoff (mm)		3	3	5	5	5	4	3	2	2	2	2	1	**35**
Rainfall (mm)		47	74	16	39	26	50	25	66	55	37	74	47	**556**

Monthly and yearly statistics for previous record (Nov 1965 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg.	0.237	0.324	0.329	0.312	0.273	0.228	0.179	0.148	0.129	0.122	0.125	0.168	**0.214**
	Low	0.064	0.067	0.071	0.072	0.068	0.060	0.043	0.034	0.033	0.047	0.048	0.051	**0.063**
	High	0.435	0.671	0.671	0.776	0.636	0.441	0.300	0.256	0.371	0.399	0.319	0.327	**0.331**
Peak flow (m^3s^{-1})		0.70	0.95	1.04	1.11	0.82	0.90	0.68	1.21	0.52	0.53	0.47	0.45	**1.21**
Runoff (mm)		11	13	15	14	12	10	8	7	6	6	5	8	**114**
Rainfall (mm)		59	42	54	49	59	57	58	62	55	57	72	64	**688**

Factors affecting flow regime: G I
Station type: C

1990 runoff is 31% of previous mean
rainfall 81%

034003 Bure at Ingworth 1990

Measuring authority: NRA-A
First year: 1959
Grid reference: 63 (TG) 192 296
Level stn. (m OD): 12.20
Catchment area (sq km): 164.7
Max alt. (m OD): 101

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	1.160	1.616	1.249	0.894	0.682	0.623	0.576	0.523	0.567	0.670	0.854	0.925	**0.857**
	Peak	2.17			1.20	0.99	0.75		2.04	0.85	0.91	1.49	1.64	
Runoff (mm)		19	24	20	14	11	10	9	9	9	11	13	15	**164**
Rainfall (mm)		56	85	20	45	16	55	27	48	48	54	81	55	**590**

Monthly and yearly statistics for previous record (Jun 1959 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg.	1.562	1.456	1.300	1.228	0.994	0.806	0.787	0.810	0.854	1.008	1.228	1.398	**1.118**
	Low	0.844	0.844	0.779	0.688	0.600	0.495	0.493	0.497	0.548	0.671	0.688	0.941	**0.798**
	High	2.450	2.954	2.115	2.322	1.639	1.168	1.158	1.955	1.823	2.428	2.024	2.560	**1.488**
Peak flow (m^3s^{-1})		8.27	10.65	6.45	18.30	6.07	3.79	3.47	12.82	9.26	10.17	10.05	9.63	**18.30**
Runoff (mm)		25	22	21	19	16	13	13	13	13	16	19	23	**214**
Rainfall (mm)		62	41	51	49	48	50	59	60	55	62	72	67	**676**

Factors affecting flow regime: G I
Station type: MIS

1990 runoff is 77% of previous mean
rainfall 87%

034004 Wensum at Costessey Mill 1990

Measuring authority: NRA-A
First year: 1960
Grid reference: 63 (TG) 177 128
Level stn. (m OD): 5.20
Catchment area (sq km): 536.1
Max alt. (m OD): 94

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows (m^3s^{-1})	Avg	3.604	5.385	3.763	2.646	1.658	1.233	0.814	0.791	1.122	1.740	2.332	2.717	**2.297**
	Peak													
Runoff (mm)		18	24	19	13	8	6	4	4	5	9	11	14	**135**
Rainfall (mm)		54	87	17	45	23	47	26	42	49	46	83	55	**574**

Monthly and yearly statistics for previous record (Feb 1960 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean flows (m^3s^{-1})	Avg	6.904	6.404	5.394	4.757	3.618	2.635	2.336	2.279	2.589	3.386	4.353	5.605	**4.178**
	Low	2.416	2.442	2.528	2.062	1.663	1.131	0.793	0.999	1.489	1.615	1.915	2.820	**2.392**
	High	11.270	15.960	10.740	8.923	6.699	4.219	3.871	6.131	7.690	11.060	9.311	11.150	**5.766**
Peak flow (m^3s^{-1})		34.00	29.20	22.32	21.28	27.20	10.33	7.83	24.00	20.13	21.99	21.74	24.44	**34.00**
Runoff (mm)		34	29	27	23	18	13	12	11	13	17	21	28	**246**
Rainfall (mm)		61	41	51	49	48	53	58	61	57	62	73	65	**679**

Factors affecting flow regime: G I
Station type: CB

1990 runoff is 55% of previous mean
rainfall 85%

035008 Gipping at Stowmarket 1990

Measuring authority: NRA-A
First year: 1964
Grid reference: 62 (TM) 058 578
Level stn. (m OD): 25.10
Catchment area (sq km): 128.9
Max alt. (m OD): 98

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.266	1.219	0.211	0.162	0.129	0.106	0.072	0.069	0.082	0.128	0.173	0.184	**0.226**
(m^3s^{-1}):	Peak	2.14	17.02			1.14	1.15	0.17	0.25	0.47	0.90	1.55	0.50	
Runoff (mm)		6	23	4	3	3	2	2	1	2	3	3	4	**55**
Rainfall (mm)		50	71	15	43	21	39	17	23	35	66	72	44	**496**

Monthly and yearly statistics for previous record (Apr 1964 to Dec 1989—incomplete or missing months total 1.8 years)

Mean	Avg	1.537	1.193	0.985	0.692	0.390	0.248	0.149	0.189	0.235	0.408	0.691	0.950	**0.637**
flows	Low	0.161	0.125	0.159	0.156	0.119	0.083	0.079	0.075	0.072	0.095	0.101	0.131	**0.149**
(m^3s^{-1})	High	4.383	3.527	2.626	2.012	1.244	1.616	0.501	1.490	1.880	3.251	3.433	2.033	**1.043**
Peak flow (m^3s^{-1})		28.13	34.39	18.60	19.30	20.18	7.98	6.22	23.77	24.19	24.23	19.74	25.54	**34.39**
Runoff (mm)		32	23	20	14	8	5	3	4	5	8	14	20	**156**
Rainfall (mm)*		53	36	44	41	46	48	48	49	49	53	59	54	**580**

*(1965-1989)

Factors affecting flow regime: G I
Station type: CC

1990 runoff is 36% of previous mean
rainfall 86%

037001 Roding at Redbridge 1990

Measuring authority: NRA-T
First year: 1950
Grid reference: 51 (TQ) 415 884
Level stn. (m OD): 5.70
Catchment area (sq km): 303.3
Max alt. (m OD): 117

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.073	7.331	0.811	0.555	0.279	0.348	0.202	0.288	0.205	0.352	0.381	0.677	**1.167**
(m^3s^{-1}):	Peak	18.10	40.10	2.64	3.01	1.26	2.71	1.35	4.69	2.38	1.94	1.82	3.63	**40.10**
Runoff (mm)		27	58	7	5	2	3	2	3	2	3	3	6	**121**
Rainfall (mm)		69	85	9	38	10	46	17	63	27	42	38	55	**499**

Monthly and yearly statistics for previous record (Feb 1950 to Dec 1989)

Mean	Avg	3.822	3.407	2.793	1.967	1.213	0.845	0.637	0.674	0.831	1.414	2.153	2.927	**1.884**
flows	Low	0.675	0.608	0.537	0.482	0.323	0.226	0.280	0.224	0.197	0.283	0.364	0.412	**0.801**
(m^3s^{-1})	High	10.920	10.670	6.858	6.768	4.045	2.953	1.975	3.925	4.012	7.883	10.340	9.454	**2.809**
Peak flow (m^3s^{-1})		42.00	30.80	38.08	27.72	32.70	21.70	24.50	31.30	25.62	35.60	62.41	36.40	**62.41**
Runoff (mm)		34	27	25	17	11	7	6	6	7	12	18	26	**198**
Rainfall (mm)		52	41	47	43	49	52	53	57	57	57	61	57	**626**

Factors affecting flow regime: S EI
Station type: EW

1990 runoff is 62% of previous mean
rainfall 80%

037005 Colne at Lexden 1990

Measuring authority: NRA-A
First year: 1959
Grid reference: 52 (TL) 962 261
Level stn. (m OD): 8.20
Catchment area (sq km): 238.2
Max alt. (m OD): 114

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.201	3.396	0.793	0.623	0.384	0.339	0.199	0.169	0.175	0.296	0.444	0.542	**0.695**
(m^3s^{-1}):	Peak	6.55	17.45	1.45	1.37	0.77	0.55	0.32	0.41	0.30	0.57	1.44	1.30	**17.45**
Runoff (mm)		14	34	9	7	4	4	2	2	2	3	5	6	**92**
Rainfall (mm)		58	76	12	41	20	38	11	37	28	46	47	43	**457**

Monthly and yearly statistics for previous record (Oct 1959 to Dec 1989)

Mean	Avg	2.085	1.761	1.682	1.248	0.793	0.501	0.376	0.364	0.395	0.785	1.148	1.514	**1.050**
flows	Low	0.460	0.346	0.380	0.358	0.229	0.146	0.100	0.088	0.179	0.188	0.288	0.352	**0.362**
(m^3s^{-1})	High	6.543	4.684	3.556	3.344	2.353	1.528	0.907	1.558	1.099	4.838	5.521	4.200	**1.732**
Peak flow (m^3s^{-1})		21.13	22.65	20.68	13.34	12.56	8.07	6.41	8.86	10.50	24.80	21.29	20.58	**24.80**
Runoff (mm)		23	18	19	14	9	5	4	4	4	9	12	17	**139**
Rainfall (mm)		49	33	45	43	44	48	48	50	50	54	57	55	**576**

Factors affecting flow regime: RP I
Station type: FL

1990 runoff is 66% of previous mean
rainfall 79%

037010 Blackwater at Appleford Bridge 1990

Measuring authority: NRA-A
First year: 1962
Grid reference: 52 (TL) 845 158
Level stn. (m OD): 14.60
Catchment area (sq km): 247.3
Max alt. (m OD): 127

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.342	3.563	0.938	0.971	1.445	1.749	0.607	0.573	0.536	0.661	1.282	1.652	**1.259**
(m^3s^{-1}):	Peak	6.75	16.90	1.65	1.99	2.12	2.13	2.27	1.21	0.91	1.08	2.47	2.38	**16.90**
Runoff (mm)		15	35	10	10	16	18	7	6	6	7	13	18	**161**
Rainfall (mm)		57	77	12	41	15	39	11	35	27	45	39	46	**444**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989)

Mean	Avg	2.171	1.912	1.931	1.491	0.996	0.738	0.566	0.516	0.532	0.827	1.182	1.648	**1.208**
flows	Low	0.532	0.460	0.479	0.479	0.341	0.356	0.182	0.161	0.215	0.288	0.325	0.379	**0.822**
(m^3s^{-1})	High	7.181	4.889	3.583	3.843	2.860	1.583	1.359	1.741	1.651	4.955	4.676	4.307	**1.659**
Peak flow (m^3s^{-1})		26.80	21.60	20.00	12.31	17.80	7.75	4.10	13.75	15.25	26.08	20.20	21.60	**28.80**
Runoff (mm)		24	19	21	16	11	8	6	6	6	9	12	18	**154**
Rainfall (mm)		48	33	48	44	47	53	47	50	49	51	58	52	**580**

Factors affecting flow regime: RP I
Station type: FL

1990 runoff is 104% of previous mean
rainfall 77%

038001 Lee at Feildes Weir — 1990

Measuring authority: NRA-T
First year: 1951
Grid reference: 52 (TL) 390 092
Level stn. (m OD): 27.70
Catchment area (sq km): 1036.0
Max alt. (m OD): 229

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.931	13.450	3.859	2.784	1.720	1.406	0.882	0.706	0.937	0.739	1.002	1.569	**2.844**
(m^3s^{-1}):	Peak	28.10	64.30	8.72	7.36	11.10	3.25	2.25	3.50	6.47	2.82	3.47	4.99	**64.30**
Runoff (mm)		15	31	10	7	4	4	2	2	2	2	3	4	**87**
Rainfall (mm)		73	91	14	35	7	42	15	45	37	45	39	60	**503**

Monthly and yearly statistics for previous record (Jun 1879 to Dec 1989—incomplete or missing months total 2.4 years)

Mean	Avg	7.512	7.689	6.609	4.980	3.917	2.831	2.190	1.996	1.871	2.989	4.575	6.238	**4.435**
flows	Low	0.866	0.659	0.460	0.484	0.302	0.224	0.081	0.085	0.132	0.162	0.416	0.553	**0.602**
(m^3s^{-1})	High	21.670	27.570	29.430	18.110	12.640	12.620	10.320	10.580	7.063	16.190	15.570	19.760	**10.353**
Peak flow (m^3s^{-1})		85.00	74.30	88.40	52.20	96.90	65.30	26.00	27.50	49.56	73.60	52.30	77.00	**96.90**
Runoff (mm)		19	18	17	12	10	7	6	5	5	8	11	16	**135**
Rainfall (mm)*		57	41	48	44	50	50	56	58	54	61	65	59	**643**

*(1936-1989)

Factors affecting flow regime: PGEI
Station type: MIS

1990 runoff is 64% of previous mean
rainfall 78%

038018 Upper Lee at Water Hall — 1990

Measuring authority: NRA-T
First year: 1971
Grid reference: 52 (TL) 299 099
Level stn. (m OD): 43.60
Catchment area (sq km): 150.0
Max alt. (m OD): 229

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.526	2.779	1.581	1.264	0.816	0.756	0.575	0.496	0.481	0.496	0.498	0.608	**0.978**
(m^3s^{-1})	Peak	4.56	11.00	2.58	1.86	1.39	1.42	1.82	2.17	2.39	1.36	1.04	1.89	**11.00**
Runoff (mm)		27	45	28	22	15	13	10	9	8	9	9	11	**205**
Rainfall (mm)		82	102	15	34	4	43	17	44	35	49	43	64	**532**

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1989)

Mean	Avg	1.532	1.582	1.673	1.606	1.453	1.288	0.994	0.907	0.876	1.031	1.126	1.329	**1.282**
flows	Low	0.708	0.667	0.601	0.531	0.452	0.423	0.373	0.289	0.439	0.533	0.496	0.546	**0.611**
(m^3s^{-1})	High	2.747	2.627	2.383	2.951	2.601	1.977	1.400	1.301	1.242	2.387	2.305	2.303	**1.702**
Peak flow (m^3s^{-1})		11.10	9.00	7.97	8.13	15.80	11.30	4.49	4.21	6.79	9.34	12.21	12.60	**15.80**
Runoff (mm)		27	26	30	28	26	22	18	16	15	18	19	24	**270**
Rainfall (mm)		59	41	60	48	57	55	45	50	55	67	58	63	**658**

Factors affecting flow regime: GEI
Station type: C

1990 runoff is 76% of previous mean
rainfall 81%

038021 Turkey Brook at Albany Park — 1990

Measuring authority: NRA-T
First year: 1971
Grid reference: 51 (TQ) 359 985
Level stn. (m OD): 16.60
Catchment area (sq km): 42.2
Max alt. (m OD): 128

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.438	0.940	0.059	0.037	0.009	0.022	0.009	0.073	0.008	0.024	0.025	0.082	**0.134**
(m^3s^{-1})	Peak	3.42	11.50	0.30	0.35	0.06	0.36	0.16	0.75	0.47	0.36	0.21	0.87	**11.50**
Runoff (mm)		28	54	4	2	1	1	1	1	1	1	2	5	**100**
Rainfall (mm)		82	104	10	37	4	47	15	57	30	46	41	65	**538**

Monthly and yearly statistics for previous record (Sep 1971 to Dec 1989)

Mean	Avg	0.435	0.340	0.367	0.238	0.175	0.095	0.043	0.054	0.058	0.184	0.242	0.335	**0.214**
flows	Low	0.037	0.042	0.024	0.020	0.014	0.021	0.013	0.008	0.012	0.016	0.019	0.086	**0.057**
(m^3s^{-1})	High	1.180	0.988	0.811	0.626	0.626	0.240	0.087	0.171	0.228	0.941	1.158	0.704	**0.339**
Peak flow (m^3s^{-1})		10.50	11.00	7.68	7.72	20.69	15.30	2.38	2.76	7.55	10.70	12.75	10.50	**20.69**
Runoff (mm)		28	20	23	15	11	6	3	3	4	12	15	21	**160**
Rainfall (mm)		61	41	62	48	59	54	46	53	59	65	60	64	**672**

Factors affecting flow regime: PG
Station type: FV

1990 runoff is 63% of previous mean
rainfall 80%

039002 Thames at Days Weir — 1990

Measuring authority: NRA-T
First year: 1938
Grid reference: 41 (SU) 568 935
Level stn. (m OD): 46.00
Catchment area (sq km): 3444.7
Max alt. (m OD): 330

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	53.650	117.200	31.620	14.930	6.974	4.777	3.129	2.829	2.607	3.622	3.751	7.305	**20.401**
(m^3s^{-1})	Peak													
Runoff (mm)		42	82	25	11	5	4	2	2	2	3	3	6	**187**
Rainfall (mm)		83	105	16	31	7	49	23	25	37	62	28	69	**535**

Monthly and yearly statistics for previous record (Oct 1938 to Dec 1989)

Mean	Avg	55.260	56.150	46.000	31.280	20.800	14.640	8.592	7.273	8.616	14.930	31.320	45.160	**28.202**
flows	Low	6.250	5.554	5.620	4.253	2.855	1.502	0.399	0.296	1.741	2.778	4.040	5.312	**10.095**
(m^3s^{-1})	High	133.600	120.800	163.200	85.070	61.140	41.560	48.820	18.690	38.630	74.570	128.100	128.700	**51.292**
Peak flow (m^3s^{-1})														
Runoff (mm)		43	40	36	24	16	11	7	6	6	12	24	35	**258**
Rainfall (mm)		66	47	54	47	59	55	54	67	60	66	70	73	**717**

Factors affecting flow regime: P EI
Station type: MIS

1990 runoff is 72% of previous mean
rainfall 75%

039005 Beverley Brook at Wimbledon Common 1990

Measuring authority: NRA-T
First year: 1935
Grid reference: 51 (TQ) 216 717
Level stn. (m OD): 11.00
Catchment area (sq km): 43.6
Max alt. (m OD): 162

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.745	1.208	0.412	0.531	0.439	0.482	0.419	0.408	0.394	0.467	0.432	0.535	0.535
(m^3s^{-1}):	Peak	6.15	14.10	0.83	3.87	3.87	4.64	1.34	3.12	3.31	6.49	4.69	8.65	14.10
Runoff (mm)		46	67	25	32	27	29	26	25	23	29	26	33	387
Rainfall (mm)		81	111	5	48	7	47	9	30	27	59	38	61	523

Monthly and yearly statistics for previous record (Mar 1935 to Dec 1989—incomplete or missing months total 23.4 years)

Mean	Avg.	0.716	0.597	0.573	0.552	0.480	0.478	0.433	0.446	0.493	0.518	0.584	0.643	0.542
flows	Low	0.280	0.244	0.290	0.257	0.214	0.157	0.211	0.189	0.224	0.160	0.274	0.247	0.291
(m^3s^{-1})	High	1.237	1.196	1.023	1.538	1.092	0.956	0.920	0.970	1.340	1.321	1.415	1.057	0.895
Peak flow (m^3s^{-1})		10.90	9.04	7.51	22.40	14.80	12.90	16.51	17.30	16.50	15.90	10.90	14.00	22.40
Runoff (mm)		44	33	35	33	30	28	27	27	29	32	35	40	393
Rainfall (mm)		59	38	47	42	51	53	49	56	57	62	63	63	640

Factors affecting flow regime: GE
Station type: FL

1990 runoff is 99% of previous mean
rainfall 82%

039014 Ver at Hansteads 1990

Measuring authority: NRA-T
First year: 1956
Grid reference: 52 (TL) 151 016
Level stn. (m OD): 61.30
Catchment area (sq km): 132.0
Max alt. (m OD): 243

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.278	0.631	0.444	0.364	0.246	0.218	0.144	0.134	0.107	0.124	0.110	0.122	0.241
(m^3s^{-1}):	Peak	0.84	1.47	0.79	0.67	0.89	0.55	0.35	0.44	0.32	0.34	0.35	0.45	1.47
Runoff (mm)		6	12	9	7	5	4	3	3	2	3	2	2	58
Rainfall (mm)		90	109	16	36	4	48	17	47	37	59	43	71	577

Monthly and yearly statistics for previous record (Oct 1956 to Dec 1989)

Mean	Avg	0.477	0.537	0.570	0.548	0.484	0.419	0.351	0.308	0.275	0.298	0.350	0.405	0.418
flows	Low	0.126	0.190	0.138	0.114	0.069	0.045	0.028	0.016	0.025	0.057	0.039	0.048	0.095
(m^3s^{-1})	High	0.981	1.336	1.312	1.254	1.028	0.857	0.651	0.564	0.660	0.668	0.791	0.977	0.752
Peak flow (m^3s^{-1})		1.77	1.91	1.88	1.90	2.07	1.65	1.44	1.13	2.34	1.50	2.31	2.64	2.64
Runoff (mm)		10	10	12	11	10	8	7	6	5	6	7	8	100
Rainfall (mm)		64	46	58	52	55	59	53	58	60	68	66	74	713

Factors affecting flow regime: G
Station type: CC

1990 runoff is 58% of previous mean
rainfall 81%

039016 Kennet at Theale 1990

Measuring authority: NRA-T
First year: 1961
Grid reference: 41 (SU) 649 708
Level stn. (m OD): 43.40
Catchment area (sq km): 1033.4
Max alt. (m OD): 297

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11.490	27.460	16.500	11.470	7.585	5.883	4.329	3.751	3.307	3.957	4.204	4.576	8.583
(m^3s^{-1}):	Peak	33.10	43.70	25.00	14.60	9.32	6.95	6.28	5.70	6.95	6.58	5.79	10.10	43.70
Runoff (mm)		30	64	43	29	20	15	11	10	8	10	11	12	262
Rainfall (mm)		115	139	16	36	8	46	22	37	32	54	31	78	614

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989)

Mean	Avg	13.120	14.530	14.660	12.720	10.380	8.596	6.492	5.723	5.365	6.129	7.877	10.220	9.626
flows	Low	4.144	4.401	4.190	3.429	2.739	2.041	1.620	1.377	2.787	3.596	3.943	5.159	4.058
(m^3s^{-1})	High	22.680	23.910	22.010	19.790	15.430	18.600	11.120	9.542	10.000	13.970	17.710	18.240	12.882
Peak flow (m^3s^{-1})		48.30	44.80	44.30	36.90	30.10	59.80	19.00	20.50	33.40	29.60	43.50	47.30	59.80
Runoff (mm)		34	34	38	32	27	22	17	15	13	16	20	26	294
Rainfall (mm)		74	50	70	51	62	61	49	66	66	69	74	82	774

Factors affecting flow regime: R G I
Station type: C

1990 runoff is 89% of previous mean
rainfall 79%

039019 Lambourn at Shaw 1990

Measuring authority: NRA-T
First year: 1962
Grid reference: 41 (SU) 470 682
Level stn. (m OD): 75.60
Catchment area (sq km): 234.1
Max alt. (m OD): 261

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.233	2.731	3.135	2.405	1.917	1.427	1.082	0.887	0.773	0.914	1.026	0.710	1.511
(m^3s^{-1}):	Peak	1.57	3.65	3.71	2.74	2.13	1.64	1.54	1.07	0.99	1.55	1.32	0.89	3.71
Runoff (mm)		14	28	36	27	22	16	12	10	9	10	11	8	204
Rainfall (mm)		103	126	17	34	8	44	19	35	26	50	27	74	563

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989)

Mean	Avg.	1.751	2.213	2.473	2.426	2.153	1.856	1.526	1.297	1.175	1.141	1.216	1.402	1.718
flows	Low	0.826	0.796	0.743	0.695	0.639	0.573	0.538	0.485	0.681	0.683	0.757	0.855	0.739
(m^3s^{-1})	High	3.410	3.719	3.583	3.550	2.979	2.764	2.359	2.048	1.699	1.921	2.392	2.551	2.151
Peak flow (m^3s^{-1})		3.93	4.20	4.39	4.08	3.76	4.34	3.06	3.54	3.75	3.17	5.02	3.72	5.02
Runoff (mm)		20	23	28	27	25	21	17	15	13	13	13	16	231
Rainfall (mm)		67	48	66	49	61	59	50	62	62	64	72	78	738

Factors affecting flow regime: R G
Station type: C

1990 runoff is 88% of previous mean
rainfall 76%

039021 Cherwell at Enslow Mill 1990

Measuring authority NRA-T
First year 1965

Grid reference 42 (SP) 482 183
Level stn (m OD) 65 00

Catchment area (sq km) 551 7
Max alt (m OD) 239

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6 488	13 730	4 265	2 526	1 674	1 253	0.671	0 511	0 469	0 810	0 881	2 382	**2.902**
(m^3s^{-1})	Peak	14 20	27 70	8 10	3 85	2 03	1 72	1 18	0 86	0 57	1 90	1 48	6 31	**27 70**
Runoff (mm)		32	60	21	12	8	6	3	2	2	4	4	12	**166**
Rainfall (mm)		71	93	12	31	9	52	27	19	35	82	33	68	**532**

Monthly and yearly statistics for previous record (Feb 1965 to Dec 1989)

Mean	Avg	7 255	7 034	6 402	4 545	3 368	2 400	1 524	1 425	1 376	2 114	3 241	5 808	**3.861**
flows	Low	0 919	0 905	0 754	0 566	0 445	0 309	0 156	0 132	0 479	0 630	0 730	0 915	**1.370**
(m^3s^{-1})	High	12 040	15 900	12 090	8 710	8 674	6 632	4 997	2 618	4 610	5 780	8 567	13.330	**5.373**
Peak flow (m^3s^{-1})		22 50	23 80	26 70	20.70	19 30	17 60	24 50	10 30	9 80	17 40	22 00	30 20	**30.20**
Runoff (mm)		35	31	31	21	16	11	7	7	6	10	15	28	**221**
Rainfall (mm)		61	45	57	45	59	60	54	64	56	57	58	69	**685**

Factors affecting flow regime P E
Station type C

1990 runoff is 75% of previous mean rainfall 78%

039023 Wye at Hedsor 1990

Measuring authority NRA-T
First year 1964

Grid reference 41 (SU) 896 867
Level stn (m OD) 26.80

Catchment area (sq km) 137.3
Max alt. (m OD) 244

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 843	1 352	1 277	1 221	1 008	0 941	0 771	0 647	0 638	0 607	0 539	0 544	**0.862**
(m^3s^{-1})	Peak	2 07	2 92	1 84	1 85	1 25	1 61	1 35	1 36	1 66	1 37	1 15	2 08	**2.92**
Runoff (mm)		16	24	25	23	20	18	15	13	12	12	10	11	**198**
Rainfall (mm)		91	113	19	31	5	51	17	44	35	58	41	78	**583**

Monthly and yearly statistics for previous record (Dec 1964 to Dec 1989)

Mean	Avg	0 972	1 068	1 167	1 197	1 164	1 123	1 020	0 968	0 877	0 845	0 831	0 876	**1.008**
flows	Low	0 419	0 483	0 488	0 470	0 432	0 380	0 370	0 314	0 381	0 395	0 375	0 340	**0.442**
(m^3s^{-1})	High	1 518	1 933	1 976	1 891	1 842	1 582	1 434	1 317	1 182	1.180	1 329	1 373	**1.365**
Peak flow (m^3s^{-1})		3 49	2 76	3 21	3 26	3 98	3 51	2 94	4.17	4 43	3.15	2 79	3.19	**4.43**
Runoff (mm)		19	19	23	23	23	21	20	19	17	16	16	17	**232**
Rainfall (mm)		71	49	63	53	64	62	56	66	66	69	69	79	**767**

Factors affecting flow regime G I
Station type C

1990 runoff is 85% of previous mean rainfall 76%

039029 Tillingbourne at Shalford 1990

Measuring authority NRA-T
First year 1968

Grid reference 51 (TQ) 000 478
Level stn (m OD) 31 70

Catchment area (sq km) 59.0
Max alt. (m OD) 294

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 618	1 072	0 557	0 520	0 423	0 418	0 351	0 332	0 349	0 400	0 399	0 412	**0.484**
(m^3s^{-1})	Peak	1 69	2 23	0 65	0 82	0 63	0 72	0 45	0 46	0 58	0 85	0 59	0 87	**2 23**
Runoff (mm)		28	44	25	23	19	18	16	15	15	18	18	19	**258**
Rainfall (mm)		119	147	6	53	8	66	10	33	38	81	48	72	**681**

Monthly and yearly statistics for previous record (Jun 1968 to Dec 1989)

Mean	Avg	0 674	0 640	0 638	0 608	0 565	0 514	0 468	0 463	0 482	0 525	0 563	0.614	**0.563**
flows	Low	0 457	0 423	0 398	0 398	0 376	0 353	0 340	0 326	0 357	0 362	0 354	0 392	**0.389**
(m^3s^{-1})	High	0 998	0 909	0 900	0 897	0 819	0 830	0 599	0 619	0 885	0 938	0 883	0 840	**0.686**
Peak flow (m^3s^{-1})		4 54	3 04	3 23	3 00	1 91	2 79	1 65	2 36	6 09	5 09	3 65	3 25	**6 09**
Runoff (mm)		31	26	29	27	26	23	21	21	21	24	25	28	**301**
Rainfall (mm)		86	48	71	54	61	57	52	81	73	79	81	82	**805**

Factors affecting flow regime N G I
Station type C

1990 runoff is 86% of previous mean rainfall 85%

039049 Silk Stream at Colindeep Lane 1990

Measuring authority NRA-T
First year 1973

Grid reference 51 (TQ) 217 895
Level stn (m OD) 39.90

Catchment area (sq km) 29 0
Max alt. (m OD) 153

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 394	0.742	0 104	0 118	0 053	0 116	0 061	0 122	0 078	0 118	0 112	0 212	**0.182**
(m^3s^{-1})	Peak	3 04	16 90	1 57	2 41	0 79	3 23	1 43	5 28	4 28	3 03	2 49	5 61	**16.90**
Runoff (mm)		36	62	10	11	5	10	6	11	7	11	10	20	**198**
Rainfall (mm)		86	108	9	38	6	46	17	57	29	51	39	67	**553**

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1989—incomplete or missing months total 4.4 years)

Mean	Avg	0 377	0 266	0 357	0 274	0 248	0 203	0 142	0 127	0 129	0 323	0 329	0 330	**0.259**
flows	Low	0 159	0 102	0 151	0 030	0 035	0 061	0 047	0 053	0 057	0 062	0 096	0 106	**0.178**
(m^3s^{-1})	High	0 790	0 472	0 676	0 574	0 602	0 643	0 231	0 204	0 363	0 904	1 086	0 659	**0.314**
Peak flow (m^3s^{-1})		9 00	6 20	8 89	10 26	39.80	37 80	16 50	30 50	27 90	40 50	24 30	36 31	**40.50**
Runoff (mm)		35	22	33	25	23	18	13	12	12	30	29	31	**282**
Rainfall (mm)		61	37	64	49	67	58	50	51	62	75	60	63	**697**

Factors affecting flow regime
Station type FV

1990 runoff is 70% of previous mean rainfall 79%

039069 Mole at Kinnersley Manor 1990

Measuring authority: NRA-T
First year: 1972
Grid reference: 51 (TQ) 262 462
Level stn. (m OD): 48.00
Catchment area (sq km): 142.0
Max alt. (m OD): 178

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.014	8.634	1.139	1.196	0.745	0.972	0.618	0.695	0.657	1.165	0.946	1.852	**1.926**
(m^3s^{-1}):	Peak	42.30	45.50	2.94	4.35	2.94	8.30	2.78	5.87	6.04	13.90	4.36	15.20	**45.50**
Runoff (mm)		95	147	21	22	14	18	12	13	12	22	17	35	**428**
Rainfall (mm)		128	144	7	51	10	65	11	41	43	95	48	74	**717**

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1989—incomplete or missing months total 1.5 years)

Mean	Avg.	3.806	2.830	2.753	1.902	1.440	0.990	0.678	0.803	0.970	2.030	2.337	3.553	**2.007**
flows	Low	1.261	0.829	0.833	0.388	0.305	0.221	0.296	0.169	0.281	0.207	0.260	1.071	**0.950**
(m^3s^{-1})	High	9.375	5.883	4.668	3.666	3.552	1.874	1.709	2.864	5.419	8.486	5.668	5.474	**2.424**
Peak flow (m^3s^{-1})		41.90	46.50	22.30	47.00	32.90	23.30	14.90	29.80	40.70	56.40	56.10	68.50	**68.50**
Runoff (mm)		72	49	52	35	27	18	13	15	18	38	43	67	**446**
Rainfall (mm)		79	51	70	48	58	58	47	58	66	91	78	94	**798**

Factors affecting flow regime: E
Station type: MIS

1990 runoff is 96% of previous mean
rainfall 90%

040004 Rother at Udiam 1990

Measuring authority: NRA-S
First year: 1962
Grid reference: 51 (TQ) 773 245
Level stn. (m OD): 1.90
Catchment area (sq km): 206.0
Max alt. (m OD): 197

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4.318	9.053	1.008	0.780	0.302	0.323	0.222	0.186	0.195	0.562	1.247	1.700	**1.608**
(m^3s^{-1})	Peak	41.25	36.17	2.91	3.51	0.46	1.03	0.37	0.28	0.29	12.25	11.44	15.03	**41.25**
Runoff (mm)		56	106	13	10	4	4	3	2	2	7	16	22	**246**
Rainfall (mm)		138	136	6	64	4	65	14	38	31	137	78	67	**778**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989—incomplete or missing months total 1.8 years)

Mean	Avg.	4.080	3.379	3.217	2.347	1.347	0.951	0.633	0.670	0.819	1.822	3.038	3.536	**2.148**
flows	Low	0.719	0.792	0.657	0.343	0.338	0.268	0.231	0.182	0.198	0.151	0.184	0.427	**0.756**
(m^3s^{-1})	High	11.990	10.370	6.927	4.533	2.817	4.157	2.790	2.682	3.952	10.750	12.360	9.547	**3.322**
Peak flow (m^3s^{-1})		41.57	44.74	49.84	25.43	24.09	23.08	22.20	14.36	33.98	42.76	50.43	51.82	**51.82**
Runoff (mm)		53	40	42	30	18	12	8	9	10	24	38	46	**329**
Rainfall (mm)		86	60	74	56	57	61	53	62	76	91	98	91	**865**

Factors affecting flow regime: S GE
Station type: VA

1990 runoff is 75% of previous mean
rainfall 90%

040009 Teise at Stone Bridge 1990

Measuring authority: NRA-S
First year: 1961
Grid reference: 51 (TQ) 718 399
Level stn. (m OD): 24.50
Catchment area (sq km): 136.2
Max alt. (m OD): 201

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1.822	4.223	0.405	1.110	0.772	0.696	0.786	0.739	0.596	0.346	0.354	0.517	**1.008**
(m^3s^{-1}):	Peak	19.53	19.48	1.18	2.12	1.26	1.42	1.19	0.83	0.80	9.90	4.07	9.30	**19.53**
Runoff (mm)		36	75	8	21	15	13	15	15	11	7	7	10	**233**
Rainfall (mm)		135	150	6	58	5	64	11	30	29	135	71	65	**759**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989)

Mean	Avg.	2.471	1.999	1.827	1.437	1.080	0.805	0.596	0.589	0.705	1.075	1.697	1.932	**1.348**
flows	Low	0.463	0.522	0.413	0.323	0.238	0.130	0.231	0.100	0.170	0.128	0.276	0.471	**0.559**
(m^3s^{-1})	High	5.757	6.241	3.928	2.781	2.306	2.628	1.359	1.132	2.359	4.786	6.344	5.334	**2.101**
Peak flow (m^3s^{-1})		41.63	48.27	34.43	24.78	38.95	29.22	13.87	10.61	23.88	29.17	47.12	48.29	**48.29**
Runoff (mm)		49	36	36	27	21	15	12	12	13	21	32	38	**312**
Rainfall (mm)		79	52	69	53	56	55	50	59	71	82	87	85	**798**

Factors affecting flow regime: RPGE
Station type: B VA

1990 runoff is 75% of previous mean
rainfall 95%

040011 Great Stour at Horton 1990

Measuring authority: NRA-S
First year: 1964
Grid reference: 61 (TR) 116 554
Level stn. (m OD): 12.50
Catchment area (sq km): 345.0
Max alt. (m OD): 205

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.810	7.339	2.433	2.205	1.314	1.417	1.069	0.891	0.842	1.443	2.528	2.701	**2.213**
(m^3s^{-1}):	Peak	19.48	19.11	5.66	5.03	2.68	2.48	1.75	2.33	2.11	8.77	15.37	8.73	**19.48**
Runoff (mm)		22	51	19	17	10	11	8	7	6	11	19	21	**202**
Rainfall (mm)		94	104	4	58	10	62	14	40	31	118	102	63	**700**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg.	5.306	4.739	4.459	3.642	2.819	2.080	1.839	1.770	1.874	2.690	3.581	4.461	**3.266**
flows	Low	1.776	2.026	1.812	1.654	1.324	1.079	0.965	0.877	1.010	1.058	1.328	1.687	**1.808**
(m^3s^{-1})	High	10.940	8.189	9.086	7.144	5.811	3.221	3.231	3.091	3.626	8.687	8.195	9.089	**4.717**
Peak flow (m^3s^{-1})		31.08	27.89	28.10	38.29	25.05	10.87	11.42	11.99	29.38	27.18	28.85	30.44	**38.29**
Runoff (mm)		41	34	35	27	22	16	14	14	14	21	27	35	**299**
Rainfall (mm)		74	49	61	50	51	51	58	56	68	78	82	75	**753**

Factors affecting flow regime: GE
Station type: B VA

1990 runoff is 68% of previous mean
rainfall 93%

040012 Darent at Hawley — 1990

Measuring authority: NRA-S
First year: 1963
Grid reference: 51 (TQ) 551 718
Level stn. (m OD): 11.20
Catchment area (sq km): 191.4
Max alt. (m OD): 251

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.413	1.780	0.585	0.396	0.165	0.110	0.048	0.015	0.020	0.021	0.018	0.013	**0.288**
(m^3s^{-1})	Peak	2.59	3.99	1.07	0.71	0.34	0.30	0.19	0.05	0.07	0.14	0.12	0.10	**3.99**
Runoff (mm)		6	23	8	5	2	1	1	0	0	0	0	0	**48**
Rainfall (mm)		112	125	5	57	13	60	9	35	36	75	48	69	**644**

Monthly and yearly statistics for previous record (Dec 1963 to Dec 1989)

Mean	Avg	0.996	1.000	0.941	0.841	0.636	0.477	0.326	0.290	0.306	0.400	0.553	0.779	**0.627**
flows	Low	0.194	0.219	0.124	0.174	0.076	0.041	0.000	0.000	0.000	0.000	0.000	0.011	**0.101**
(m^3s^{-1})	High	2.060	2.076	1.804	1.515	1.509	0.982	0.617	0.690	1.817	1.516	1.448	1.674	**1.067**
Peak flow (m^3s^{-1})		5.79	3.92	4.05	3.09	13.10	3.06	2.35	2.27	10.05	3.77	4.91	4.36	**13.10**
Runoff (mm)		14	13	13	11	9	6	5	4	4	6	7	11	**103**
Rainfall (mm)		70	46	61	53	57	55	55	57	68	67	72	74	**735**

Factors affecting flow regime: G
Station type: C

1990 runoff is 46% of previous mean rainfall 88%

041001 Nunningham Stream at Tilley Bridge — 1990

Measuring authority: NRA-S
First year: 1950
Grid reference: 51 (TQ) 662 129
Level stn. (m OD): 3.80
Catchment area (sq km): 16.9
Max alt. (m OD): 137

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.491	0.728	0.092	0.054	0.027	0.019	0.020	0.021	0.017	0.038	0.074	0.111	**0.137**
(m^3s^{-1})	Peak	8.77	6.16	0.41	0.28	0.07	0.07	0.16	0.04	0.03	1.44	0.83	1.39	**8.77**
Runoff (mm)		78	104	15	8	4	3	3	3	3	6	11	18	**258**
Rainfall (mm)		122	107	5	55	7	56	13	34	30	134	76	62	**701**

Monthly and yearly statistics for previous record (Apr 1950 to Dec 1989)

Mean	Avg	0.428	0.330	0.244	0.147	0.078	0.052	0.033	0.039	0.052	0.127	0.289	0.362	**0.181**
flows	Low	0.062	0.094	0.054	0.034	0.023	0.012	0.010	0.008	0.009	0.013	0.019	0.033	**0.053**
(m^3s^{-1})	High	1.108	0.958	0.577	0.390	0.195	0.319	0.210	0.125	0.359	0.576	1.017	1.082	**0.306**
Peak flow (m^3s^{-1})		8.84	8.60	8.49	5.94	6.20	7.92	1.89	9.32	8.92	8.82	11.90	8.84	**11.90**
Runoff (mm)		68	48	39	23	12	8	5	6	8	20	44	57	**338**
Rainfall (mm)		84	58	62	49	52	55	57	70	74	91	96	95	**843**

Factors affecting flow regime: R
Station type: MIS

1990 runoff is 76% of previous mean rainfall 83%

041005 Ouse at Gold Bridge — 1990

Measuring authority: NRA-S
First year: 1960
Grid reference: 51 (TQ) 429 214
Level stn. (m OD): 11.40
Catchment area (sq km): 180.9
Max alt. (m OD): 203

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	4.061	9.852	1.608	1.383	0.690	0.632	0.638	0.557	0.594	1.012	0.880	1.465	**1.893**
(m^3s^{-1})	Peak	46.18	44.92	3.40	3.14	1.67	2.16	1.33	1.02	1.84	12.12	5.72	9.29	**46.18**
Runoff (mm)		60	132	24	20	10	9	9	8	9	15	13	22	**330**
Rainfall (mm)		143	146	7	59	11	69	10	33	43	137	58	69	**785**

Monthly and yearly statistics for previous record (Mar 1960 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg	4.326	3.518	3.112	2.412	1.702	1.085	0.681	0.751	1.025	1.949	3.219	3.479	**2.266**
flows	Low	0.887	1.240	0.793	0.611	0.450	0.283	0.219	0.157	0.230	0.275	0.384	0.723	**0.934**
(m^3s^{-1})	High	10.330	8.214	6.888	4.318	3.657	3.829	1.903	2.458	4.296	12.660	12.030	7.657	**3.334**
Peak flow (m^3s^{-1})		49.14	71.85	29.86	31.57	26.35	27.91	16.52	33.15	49.01	73.71	86.92	81.06	**86.92**
Runoff (mm)		64	47	46	35	25	16	10	11	15	29	46	52	**395**
Rainfall (mm)		87	55	70	59	60	61	53	65	78	91	98	91	**868**

Factors affecting flow regime: SRPGE
Station type: CBVA

1990 runoff is 83% of previous mean rainfall 90%

041006 Uck at Isfield — 1990

Measuring authority: NRA-S
First year: 1964
Grid reference: 51 (TQ) 459 190
Level stn. (m OD): 11.30
Catchment area (sq km): 87.8
Max alt. (m OD): 232

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.154	5.205	0.704	0.603	0.276	0.247	0.224	0.161	0.154	0.415	0.404	0.606	**0.986**
(m^3s^{-1})	Peak	52.71	47.21	1.47	2.33	0.46	0.96	0.55	0.40	0.93	18.84	3.55	7.31	**52.71**
Runoff (mm)		96	143	21	18	8	7	7	5	5	13	12	18	**354**
Rainfall (mm)		134	135	6	61	5	66	12	31	36	137	65	60	**748**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1989)

Mean	Avg	2.320	1.759	1.435	1.106	0.742	0.510	0.346	0.351	0.510	1.012	1.599	1.979	**1.137**
flows	Low	0.473	0.627	0.413	0.324	0.252	0.170	0.142	0.106	0.170	0.160	0.211	0.342	**0.480**
(m^3s^{-1})	High	6.355	4.195	3.317	2.183	1.854	1.657	1.489	1.506	2.868	6.692	6.536	4.033	**1.945**
Peak flow (m^3s^{-1})		55.60	75.63	39.12	45.22	28.97	29.59	46.63	33.74	36.40	63.04	64.43	55.58	**75.63**
Runoff (mm)		71	49	44	33	23	15	11	11	15	31	47	60	**409**
Rainfall (mm)		84	57	67	50	55	62	52	62	73	87	90	89	**828**

Factors affecting flow regime: E
Station type: C

1990 runoff is 87% of previous mean rainfall 90%

041019 Arun at Alfoldean 1990

Measuring authority: NRA-S
First year: 1970
Grid reference: 51 (TQ) 117 331
Level stn (m OD) 21 40
Catchment area (sq km): 139.0
Max alt. (m OD) 294

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.170	9.828	0 683	0.477	0.240	0 323	0 188	0 172	0 195	0.382	0 422	1.003	**1.536**
(m^3s^{-1})	Peak	61 15	65 26	2.17	2 11	0 75	2 22	0.63	0 88	1.89	4 04	1 78	9 06	**65.26**
Runoff (mm)		100	171	13	9	5	6	4	3	4	7	8	19	**348**
Rainfall (mm)		121	138	7	46	9	70	12	36	44	84	52	69	**688**

Monthly and yearly statistics for previous record (May 1970 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	3.793	2.458	2.425	1 731	1 082	0 705	0 324	0 383	0 631	1.731	2 484	3 008	**1.728**
flows	Low	0.621	0 689	0 469	0 277	0 223	0 131	0 138	0 078	0 161	0.150	0 167	0.492	**0.589**
(m^3s^{-1})	High	10 770	6.708	4 413	3.829	3 313	3 055	1 116	1 618	5 443	11.580	10 030	6.152	**2.845**
Peak flow (m^3s^{-1})		68 63	67 53	54 45	76.97	47.48	46 54	.7 27	23 86	56 14	71.12	69.14	77 65	**77.65**
Runoff (mm)		73	43	47	32	21	13	6	7	12	33	46	58	**392**
Rainfall (mm)		85	49	72	51	57	56	46	58	68	85	84	87	**798**

Factors affecting flow regime: E
Station type: CC

1990 runoff is 89% of previous mean
rainfall 86%

041027 Rother at Princes Marsh 1990

Measuring authority: NRA-S
First year: 1972
Grid reference: 41 (SU) 772 270
Level stn (m OD) 56 40
Catchment area (sq km): 37.2
Max alt. (m OD) 252

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 056	2.228	0 512	0 333	0 227	0 220	0 164	0 139	0 140	0 177	0 204	0 289	**0.462**
(m^3s^{-1})	Peak	11.25	17.79	1.04	0 43	0 39	0 71	0 39	0 36	0.33	1 18	0 47	2 08	**17.79**
Runoff (mm)		76	145	37	23	16	15	12	10	10	13	14	21	**392**
Rainfall (mm)		164	200	6	43	12	80	16	36	42	87	53	85	**824**

Monthly and yearly statistics for previous record (Nov 1972 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	0 861	0 700	0.677	0 501	0 381	0 277	0 215	0 222	0 267	0 488	0.585	0 794	**0.497**
flows	Low	0.273	0.320	0.237	0 194	0 158	0 121	0 120	0 106	0.146	0 165	0.167	0 348	**0.288**
(m^3s^{-1})	High	1.485	1.409	1 220	0 694	0 641	0 471	0 300	0 493	0.949	1 088	1 855	1 299	**0.896**
Peak flow (m^3s^{-1})		15 83	13 72	10 71	8 75	7 20	4 68	2.17	4 55	12 97	68 03	16 60	22 19	**68.03**
Runoff (mm)		62	46	49	35	27	19	15	16	19	35	41	57	**422**
Rainfall (mm)		95	58	85	48	62	53	56	62	77	97	85	108	**886**

Factors affecting flow regime: GE
Station type: C

1990 runoff is 93% of previous mean
rainfall 93%

042003 Lymington at Brockenhurst Park 1990

Measuring authority: NRA-S
First year: 1960
Grid reference: 41 (SU) 318 019
Level stn. (m OD): 6 10
Catchment area (sq km): 98.9
Max alt. (m OD): 114

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2 392	3 680	0 494	0 419	0 133	0 205	0 056	0 024	0 044	0 300	0 401	0 730	**0.721**
(m^3s^{-1})	Peak	10 09	10 13	1 82	1 35	0.70	2.62	0 27	0.12	0 83	4 17	2 77	6.26	**10.13**
Runoff (mm)		65	90	13	11	. 4	5	2	1	1	8	11	20	**230**
Rainfall (mm)		138	187	6	49	17	62	12	27	45	99	53	70	**765**

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	1 826	1 639	1 486	1 032	0 782	0 433	0 237	0 256	0 423	0.999	1 341	1 588	**1.001**
flows	Low	0 330	0.439	0.327	0 168	0 128	0 042	0 013	0 014	0 052	0 128	0 198	0 522	**0.407**
(m^3s^{-1})	High	3 723	3.459	3.089	2.169	1 569	1 247	1 603	0 847	2 308	4 841	5.283	3 294	**1.340**
Peak flow (m^3s^{-1})		10 13	13.62	10 13	10 13	13 98	7 95	11 38	8.16	8 47	11.28	13 54	14 91	**14.91**
Runoff (mm)		49	40	40	27	21	11	6	7	11	27	35	43	**319**
Rainfall (mm)		88	59	72	52	61	56	.44	62	73	89	90	94	**840**

Factors affecting flow regime: N
Station type: TP

1990 runoff is 72% of previous mean
rainfall 91%

042004 Test at Broadlands 1990

Measuring authority: NRA-S
First year: 1957
Grid reference: 41 (SU) 354 188
Level stn. (m OD): 10.10
Catchment area (sq km): 1040.0
Max alt. (m OD): 297

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11 120	23 980	17 130	12 610	8 952	6 722	5 775	5 178	4 879	5 331	4 934	5 554	**9 249**
(m^3s^{-1})	Peak													
Runoff (mm)		29	56	44	31	23	17	15	.13	12	14	12	14	**280**
Rainfall (mm)		131	161	9	34	12	49	18	37	42	72	41	81	**687**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1989—incomplete or missing months total 0.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	14.770	15.620	15.290	13.670	11 670	9 765	7 942	7 408	7 523	8.888	10 410	12 340	**11.252**
flows	Low	7 172	6 932	6 686	6 107	4 861	4 558	3 708	4 263	5 188	5 490	5 633	6 069	**6.597**
(m^3s^{-1})	High	34.670	32 680	24 430	19 050	16 320	13 540	10 850	10 440	12 810	27 060	33 510	35.180	**18.789**
Peak flow (m^3s^{-1})														
Runoff (mm)		38	37	39	34	30	24	20	19	19	23	26	32	**341**
Rainfall (mm)		84	53	70	51	58	57	48	64	69	80	82	92	**808**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 82% of previous mean
rainfall 85%

042006 Meon at Mislingford 1990

Measuring authority: NRA-S
First year: 1958
Grid reference: 41 (SU) 589 141
Level stn (m OD): 29.30
Catchment area (sq km): 72.8
Max alt. (m OD): 233

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 683	3 283	2.138	1 254	0 676	0 468	0 297	0 193	0 152	0 158	0.153	0 179	**0.786**
(m^3s^{-1})	Peak	1 81	4 27	2 92	1 66	0 97	0 62	1 15	0 63	0 28	0 33	0 26	0 30	**4.27**
Runoff (mm)		25	109	79	45	25	17	11	7	5	6	5	7	**340**
Rainfall (mm)		141	186	7	44	14	77	15	39	45	87	55	74	**784**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1989)

Mean	Avg	1 534	1 775	1 636	1 391	1 035	0 746	0 528	0 395	0 347	0 516	0 816	1 103	**0.981**
flows	Low	0 355	0 467	0 427	0 335	0.164	0 120	0 079	0 068	0 102	0 110	0 124	0 186	**0 334**
(m^3s^{-1})	High	3 470	3 310	2 820	2 024	1 738	1.220	0 827	0 657	0 882	2 309	4.126	3 917	**1.813**
Peak flow (m^3s^{-1})		3 84	4 10	3 26	2 83	2 06	1.50	1 23	1 07	0 96	1.68	2 83	3 77	**4.10**
Runoff (mm)		56	60	60	50	38	27	19	15	12	19	29	41	**425**
Rainfall (mm)		97	60	78	58	65	57	54	70	79	95	98	104	**915**

Factors affecting flow regime: G
Station type: FL

1990 runoff is 80% of previous mean
rainfall 86%

042008 Cheriton Stream at Sewards Bridge 1990

Measuring authority: NRA-S
First year: 1970
Grid reference: 41 (SU) 574 323
Level stn (m OD): 55 80
Catchment area (sq km): 75 1
Max alt. (m OD): 233

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0 575	1 562	1 139	0 785	0 541	0 443	0 345	0 275	0 252	0 256	0 277	0 309	**0.556**
(m^3s^{-1})	Peak	0 90	2 06	1 51	0 98	0 77	0 58	0 52	0 37	0 36	0.59	0 52	0 45	**2.06**
Runoff (mm)		21	50	41	27	19	15	12	10	9	9	10	11	**234**
Rainfall (mm)		150	188	7	40	19	71	15	40	45	83	53	80	**791**

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1989)

Mean	Avg	0 814	0 933	0.896	0 839	0 687	0 563	0 464	0 399	0 371	0 420	0 515	0 681	**0.630**
flows	Low	0 393	0 435	0 409	0 320	0 271	0 218	0 183	0 165	0 207	0 215	0 254	0 320	**0.408**
(m^3s^{-1})	High	1 293	1 481	1 410	1 065	0.857	0 959	0 797	0 708	0 560	0 672	0 980	1 278	**0.768**
Peak flow (m^3s^{-1})		1 69	1 83	1 68	1 39	1 26	2 02	1 25	1 28	0 77	0 91	1 23	1 85	**2.02**
Runoff (mm)		29	30	32	29	24	19	17	14	13	15	18	24	**265**
Rainfall (mm)		96	61	82	51	60	57	56	63	73	90	94	103	**886**

Factors affecting flow regime: N
Station type: C

1990 runoff is 88% of previous mean
rainfall 89%

043006 Nadder at Wilton Park 1990

Measuring authority: NRA-W
First year: 1966
Grid reference: 41 (SU) 098 308
Level stn (m OD): 51 10
Catchment area (sq km): 220 6
Max alt. (m OD): 277

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	4 471	12 290	4 568	2 650	1 588	1 417	1 123	0 867	0 801	0 918	0 878	1 324	**2.677**
(m^3s^{-1})	Peak	12 50	26 61	8 50	3.62	1 96	1 72	1 76	1.44	1 48	3 01	1 56	4 71	**26.61**
Runoff (mm)		54	135	55	31	19	17	14	11	9	11	10	16	**383**
Rainfall (mm)		132	194	11	34	12	59	29	40	53	86	48	86	**784**

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1989)

Mean	Avg	4 645	4 999	4 386	3 340	2 500	1 937	1 499	1 324	1 326	1 780	2.519	3 810	**2.829**
flows	Low	1 011	1 263	1.358	1 048	0 993	0 839	0 684	0 595	0 823	0 829	0 905	1 219	**1 535**
(m^3s^{-1})	High	6 773	8 196	6 732	5.936	4 044	3 283	2 234	2 040	3 093	3 537	6 413	7 030	**3.821**
Peak flow (m^3s^{-1})		22 71	17 57	18 80	14 27	28.13	8 83	13 39	6 61	16 68	10 99	22 90	47 88	**47.88**
Runoff (mm)		56	55	53	39	30	23	18	16	16	22	30	46	**405**
Rainfall (mm)		95	71	81	52	69	60	52	70	75	87	87	104	**903**

Factors affecting flow regime: N
Station type: C

1990 runoff is 95% of previous mean
rainfall 87%

043007 Stour at Throop Mill 1990

Measuring authority: NRA-W
First year: 1973
Grid reference: 40 (SZ) 113 958
Level stn (m OD): 4.40
Catchment area (sq km): 1073 0
Max alt. (m OD): 277

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	26 350	69 370	18 700	9 343	5 525	4 220	2 459	1 898	1 892	3 289	4 063	7 732	**12.527**
(m^3s^{-1})	Peak	77 96	137 70	39 39	12 76	7 17	6 17	4 18	2 64	3 11	10 30	9 55	26 24	**137.70**
Runoff (mm)		66	156	47	23	14	10	6	5	5	8	10	19	**368**
Rainfall (mm)		130	186	10	36	18	54	23	34	58	94	49	80	**772**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1989)

Mean	Avg	23.820	24 430	20 880	14 560	9 614	6 535	4 497	4 242	4 966	8 774	13 110	22 510	**13.114**
flows	Low	4 319	6 826	7 548	4 483	3 157	2 231	1 614	1 358	2 413	2 716	2 823	6 386	**6.138**
(m^3s^{-1})	High	38 730	42 200	32 620	27 070	18 900	16 940	7 932	8 998	20 340	29 770	36 730	40 270	**17.377**
Peak flow (m^3s^{-1})		116 60	131 50	110 20	88 24	150 00	180 00	47 60	32 41	90 33	101 90	133 40	280 00	**280.00**
Runoff (mm)		59	56	52	35	24	16	11	11	12	22	32	56	**386**
Rainfall (mm)		87	66	81	45	59	54	50	63	74	87	79	109	**854**

Factors affecting flow regime: PGE
Station type: CC

1990 runoff is 95% of previous mean
rainfall 90%

044002 Piddle at Baggs Mill 1990

Measuring authority: NRA-W
First year: 1963
Grid reference: 30 (SY) 913 876
Level stn (m OD) 2.10
Catchment area (sq km): 183.1
Max alt. (m OD): 275

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	3.136	8.785	4.345	2.429	1.569	1.208	0.885	0.636	0.598	0.798	0.906	1.099	**2.155**
(m^3s^{-1}):	Peak	7.83	10.02	7.18	3.18	2.07	1.53	1.37	0.95	1.27	2.50	1.52	2.86	**10.02**
Runoff (mm)		46	116	64	34	23	17	13	9	8	12	13	16	**371**
Rainfall (mm)		145	196	10	40	29	46	30	30	50	105	57	86	**824**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 0.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	3.591	4.315	3.878	3.018	2.194	1.665	1.231	1.076	1.081	1.411	2.066	2.875	**2.357**
flows	Low	1.045	1.020	1.093	0.945	0.757	0.571	0.483	0.433	0.604	0.707	0.721	0.853	**1.328**
(m^3s^{-1})	High	5.959	7.062	6.202	4.782	3.376	2.907	1.755	1.526	2.300	3.106	5.047	5.654	**3.233**
Peak flow (m^3s^{-1})		11.87	9.18	9.37	6.48	8.11	9.23	4.79	4.50	8.18	9.29	9.20	8.62	**11.87**
Runoff (mm)		53	58	57	43	32	24	18	16	15	21	29	42	**406**
Rainfall (mm)		107	80	88	53	67	58	48	64	82	95	104	115	**961**

Factors affecting flow regime: G
Station type: FL

1990 runoff is 91% of previous mean rainfall 86%

044006 Sydling Water at Sydling St Nicholas 1990

Measuring authority: NRA-W
First year: 1969
Grid reference: 30 (SY) 632 997
Level stn (m OD) 109.70
Catchment area (sq km) 12.4
Max alt (m OD) 262

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.226	0.599	0.322	0.184	0.126	0.100	0.084	0.073	0.065	0.061	0.056	0.057	**0.160**
(m^3s^{-1}).	Peak	0.43	0.93	0.46	0.24	0.19	0.12	0.16	0.11	0.13	0.14	0.08	0.10	**0.93**
Runoff (mm)		49	117	70	38	27	21	18	16	14	13	12	12	**407**
Rainfall (mm)		166	211	12	44	30	55	42	38	64	84	59	86	**891**

Monthly and yearly statistics for previous record (Dec 1969 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	0.277	0.322	0.289	0.230	0.172	0.142	0.108	0.091	0.087	0.107	0.146	0.219	**0.182**
flows	Low	0.060	0.070	0.092	0.087	0.069	0.060	0.051	0.045	0.052	0.053	0.048	0.063	**0.103**
(m^3s^{-1})	High	0.422	0.499	0.426	0.356	0.244	0.282	0.155	0.121	0.211	0.317	0.329	0.386	**0.225**
Peak flow (m^3s^{-1})		0.93	1.03	0.92	0.47	1.57	1.02	0.37	0.79	0.39	0.64	0.60	1.22	**1.57**
Runoff (mm)		60	63	62	48	37	30	23	20	18	23	31	47	**463**
Rainfall (mm)		125	86	101	56	71	61	51	70	88	95	111	129	**1044**

Factors affecting flow regime: N
Station type: C

1990 runoff is 88% of previous mean rainfall 85%

045003 Culm at Wood Mill 1990

Measuring authority: NRA-SW
First year: 1962
Grid reference: 31 (ST) 021 058
Level stn. (m OD): 44.00
Catchment area (sq km): 226.1
Max alt. (m OD): 293

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	7.911	13.320	3.251	2.063	1.327	1.306	1.160	0.868	1.011	1.387	2.882	3.953	**3.305**
(m^3s^{-1}):	Peak	66.42	48.68	11.96	4.30	1.74	3.37	5.90	2.88	10.53	5.28	21.35	20.67	**66.42**
Runoff (mm)		94	142	39	24	16	15	14	10	12	16	33	47	**481**
Rainfall (mm)		147	191	18	36	12	79	54	42	59	83	90	96	**907**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	6.616	6.324	5.114	3.486	2.801	1.994	1.765	1.603	1.898	3.014	4.375	6.052	**3.743**
flows	Low	1.930	2.251	2.392	1.318	1.085	0.803	0.650	0.569	0.971	0.971	1.287	2.479	**2.277**
(m^3s^{-1})	High	12.870	11.820	9.184	7.445	6.337	4.449	5.200	2.787	7.328	11.430	8.191	11.880	**4.840**
Peak flow (m^3s^{-1})		110.70	100.10	50.11	61.98	33.82	30.58	202.20	58.62	94.16	49.07	134.50	142.80	**202.20**
Runoff (mm)		78	68	61	40	33	23	21	19	22	36	50	72	**522**
Rainfall (mm)		109	81	88	59	69	62	59	67	77	90	95	112	**968**

Factors affecting flow regime PGEI
Station type: FV VA

1990 runoff is 88% of previous mean rainfall 94%

045004 Axe at Whitford 1990

Measuring authority: NRA-SW
First year: 1964
Grid reference: 30 (SY) 262 953
Level stn. (m OD): 7.30
Catchment area (sq km): 288.5
Max alt (m OD): 316

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	11.550	18.720	4.210	2.744	1.825	1.667	1.394	1.140	1.225	1.720	3.011	4.266	**4.364**
(m^3s^{-1}):	Peak	54.38	90.96	12.33	4.43	2.83	3.09	5.42	2.54	9.64	7.42	20.98	22.56	**90.96**
Runoff (mm)		107	157	39	25	17	15	13	11	11	16	27	40	**477**
Rainfall (mm)		161	205	14	32	14	66	44	40	56	75	77	81	**865**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	9.179	8.262	6.590	4.294	3.632	2.508	1.988	2.124	2.536	4.259	5.721	8.500	**4.954**
flows	Low	1.891	2.448	2.551	1.567	1.176	0.817	0.626	0.554	1.242	1.243	1.714	3.125	**2.689**
(m^3s^{-1})	High	15.740	15.860	11.690	8.346	7.274	4.678	5.312	4.941	9.909	16.440	11.980	14.440	**8.409**
Peak flow (m^3s^{-1})		110.60	114.60	93.02	75.41	173.40	75.04	228.80	128.00	88.95	99.72	116.90	244.00	**244.00**
Runoff (mm)		85	70	61	39	34	23	18	20	23	40	51	79	**542**
Rainfall (mm)		120	85	84	56	72	63	60	72	80	96	94	121	**1003**

Factors affecting flow regime: PGEI
Station type: CC

1990 runoff is 88% of previous mean rainfall 86%

046003 Dart at Austins Bridge 1990

Measuring authority: NRA-SW
First year: 1958
Grid reference: 20 (SX) 751 659
Level stn. (m OD): 22.40
Catchment area (sq km): 247.6
Max alt. (m OD): 604

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	26.150	43.870	8.556	3.275	1.942	2.247	3.023	1.878	2.080	5.387	9.657	13.180	**9.890**
(m^3s^{-1}):	Peak	123.90	210.10	27.08	7.99	3.80	15.11	17.25	11.62	30.78	26.52	33.44	95.80	**210.10**
Runoff (mm)		283	429	93	34	21	24	33	20	22	58	101	143	**1260**
Rainfall (mm)		368	445	34	60	29	135	93	71	103	169	139	209	**1855**

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1989)

Mean	Avg	19.570	16.860	14.090	10.070	7.190	4.904	3.785	4.709	5.852	11.020	14.840	19.310	**10.995**
flows	Low	5.435	4.270	5.731	3.568	2.220	1.456	0.996	0.713	0.905	1.229	5.048	8.232	**7.304**
(m^3s^{-1})	High	36.680	37.760	33.520	22.720	14.530	14.260	10.930	12.590	26.290	28.000	33.400	35.540	**15.592**
Peak flow (m^3s^{-1})		284.00	309.40	236.10	187.40	98.88	253.00	206.50	222.20	327.60	168.20	317.80	549.70	**549.70**
Runoff (mm)		212	166	152	105	78	51	41	51	61	119	155	209	**1401**
Rainfall (mm)		226	158	168	114	105	92	92	120	136	182	197	233	**1823**

Factors affecting flow regime: SR
Station type: VA

1990 runoff is 90% of previous mean rainfall 102%

047007 Yealm at Puslinch 1990

Measuring authority: NRA-SW
First year: 1963
Grid reference: 20 (SX) 574 511
Level stn. (m OD): 5.50
Catchment area (sq km): 54.9
Max alt. (m OD): 492

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.112	6.221	1.236	0.450	0.237	0.254	0.337	0.229	0.251	0.530	1.299	1.412	**1.265**
(m^3s^{-1}):	Peak	11.18	26.77	3.57	1.09	0.59	1.23	2.71	2.20	6.31	6.06	9.33	13.10	**26.77**
Runoff (mm)		152	274	60	21	12	12	16	11	12	26	61	69	**727**
Rainfall (mm)		218	299	26	54	27	111	87	62	97	124	111	117	**1333**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	2.983	2.790	2.161	1.397	0.969	0.773	0.557	0.657	0.799	1.425	2.189	2.876	**1.627**
flows	Low	0.563	1.015	0.659	0.572	0.327	0.171	0.095	0.057	0.183	0.121	0.373	1.171	**1.052**
(m^3s^{-1})	High	4.947	5.806	5.290	3.646	1.997	2.377	1.863	1.957	3.630	3.808	4.881	6.108	**2.210**
Peak flow (m^3s^{-1})		27.49	23.24	26.63	24.11	17.53	23.47	25.22	28.32	21.33	26.66	26.62	25.18	**28.32**
Runoff (mm)		146	124	105	66	47	36	27	32	38	70	103	140	**935**
Rainfall (mm)		167	128	133	79	92	89	81	102	112	136	156	172	**1447**

Factors affecting flow regime: P I
Station type: FLVA

1990 runoff is 78% of previous mean rainfall 92%

047008 Thrushel at Tinhay 1990

Measuring authority: NRA-SW
First year: 1969
Grid reference: 20 (SX) 398 856
Level stn. (m OD): 55.50
Catchment area (sq km): 112.7
Max alt. (m OD): 374

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.310	7.376	1.150	0.624	0.309	0.419	0.634	0.336	0.583	1.254	2.802	2.797	**1.931**
(m^3s^{-1})	Peak	43.14	37.41	4.82	3.24	0.60	3.02	3.28	0.62	1.49	8.66	19.74	18.66	**43.14**
Runoff (mm)		126	158	27	14	7	10	15	8	13	30	64	66	**540**
Rainfall (mm)		209	242	30	50	32	126	59	63	73	145	103	115	**1247**

Monthly and yearly statistics for previous record (Nov 1969 to Dec 1989)

Mean	Avg	5.059	3.975	3.201	1.659	1.102	0.687	0.424	0.753	1.025	2.501	3.700	4.746	**2.398**
flows	Low	1.317	0.951	1.428	0.481	0.237	0.110	0.028	0.019	0.116	0.069	0.442	2.405	**1.640**
(m^3s^{-1})	High	9.701	8.826	7.477	4.038	4.209	2.491	1.417	2.916	6.671	6.878	7.195	8.122	**3.750**
Peak flow (m^3s^{-1})		53.32	61.78	61.46	27.72	38.72	57.13	10.91	33.64	75.12	66.18	57.07	124.40	**124.40**
Runoff (mm)		120	86	76	38	26	16	10	18	24	59	85	113	**672**
Rainfall (mm)*		142	97	104	60	68	72	69	89	94	118	129	140	**1182**

*(1970-1989)

Factors affecting flow regime: S H
Station type: CC

1990 runoff is 80% of previous mean rainfall 105%

048004 Warleggan at Trengoffe 1990

Measuring authority: NRA-SW
First year: 1969
Grid reference: 20 (SX) 159 674
Level stn. (m OD): 70.30
Catchment area (sq km): 25.3
Max alt. (m OD): 308

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.415	2.332	0.893	0.445	0.275	0.285	0.326	0.227	0.203	0.379	1.124	1.065	**0.737**
(m^3s^{-1}):	Peak	3.41	4.10	1.57	0.74	0.41	0.67	0.91	0.49	0.56	1.12	2.29	2.67	**4.10**
Runoff (mm)		150	223	95	46	29	29	35	24	21	40	115	113	**919**
Rainfall (mm)		231	282	38	61	37	137	86	73	79	183	164	146	**1517**

Monthly and yearly statistics for previous record (Oct 1969 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg	1.436	1.362	1.037	0.735	0.520	0.414	0.339	0.381	0.457	0.697	1.008	1.331	**0.807**
flows	Low	0.648	0.751	0.585	0.403	0.288	0.208	0.151	0.118	0.177	0.208	0.233	0.843	**0.610**
(m^3s^{-1})	High	2.584	2.906	1.588	1.234	0.978	0.904	0.688	0.950	1.677	1.557	1.775	1.949	**1.228**
Peak flow (m^3s^{-1})		14.31	14.85	5.27	4.59	3.19	5.96	4.35	8.60	14.85	7.86	15.38	11.25	**15.38**
Runoff (mm)		152	132	110	75	55	42	36	40	47	74	103	141	**1007**
Rainfall (mm)*		181	120	132	71	80	85	88	106	121	147	164	176	**1471**

*(1970-1989)

Factors affecting flow regime: N
Station type: CC

1990 runoff is 91% of previous mean rainfall 103%

048005 Kenwyn at Truro 1990

Measuring authority: NRA-SW
First year: 1968
Grid reference: 10 (SW) 820 450
Level stn. (m OD) 7 20
Catchment area (sq km) 19 1
Max alt (m OD) 152

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	1 020	1 638	0 405	0 156	0 090	0 075	0 059	0 047	0.051	0 084	0 269	0 571	**0.364**
(m^3s^{-1}):	Peak	4.46	5 64	1 01	0 34	0.28	0 26	0 39	0 18	0 31	0.41	1 84	3 00	**5.64**
Runoff (mm)		143	207	57	21	13	10	8	7	7	12	36	80	**601**
Rainfall (mm)		178	218	24	50	24	90	61	48	53	129	118	140	**1133**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1989)

Mean	Avg.	0 811	0 760	0 554	0 330	0 195	0 138	0 090	0 088	0.111	0 264	0 468	0 741	**0.377**
flows	Low	0.283	0.333	0 228	0 162	0 124	0 070	0 043	0 026	0 037	0 034	0 046	0 436	**0.264**
(m^3s^{-1})	High	1 505	1 536	0.917	0.613	0 418	0 358	0 162	0 179	0.564	0 714	1 093	1 091	**0.544**
Peak flow (m^3s^{-1})		22 50	7 19	5 74	4 07	1 82	3 71	2.79	2 29	4.10	30 37	9.74	13 35	**30.37**
Runoff (mm)		114	97	78	45	27	19	13	12	15	37	63	104	**624**
Rainfall (mm)		145	101	100	56	63	63	55	74	84	112	127	142	**1122**

Factors affecting flow regime: N
Station type: CC

1990 runoff is 96% of previous mean rainfall 101%

048011 Fowey at Restormel 1990

Measuring authority: NRA-SW
First year: 1961
Grid reference: 20 (SX) 098 624
Level stn. (m OD) 9 20
Catchment area (sq km) 169 1
Max alt. (m OD) 420

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9 405	17.200	4.156	1 685	1 034	1 120	1 436	0 947	0 805	1 879	6 405	5 493	**4.211**
(m^3s^{-1}):	Peak	29.23	50.18	10 71	2 96	2.15	2.57	3 91	2 03	2 57	6 28	16.55	15 79	**50.18**
Runoff (mm)		149	246	66	26	16	17	23	15	12	30	98	87	**785**
Rainfall (mm)		230	285	37	58	36	138	84	71	77	176	162	139	**1493**

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989)

Mean	Avg	9.192	8 215	6 167	4 128	2.999	2 157	1 828	2 036	2 571	4.545	6 633	9 035	**4.946**
flows	Low	3 071	3 304	2.727	1 808	1 048	0 693	0 563	0 343	0 673	0 617	0 921	4 401	**3.391**
(m^3s^{-1})	High	17 330	21.780	12 130	7 641	6 447	5.479	4 859	6 044	10 490	11 720	15 450	20 890	**7.440**
Peak flow (m^3s^{-1})		104.80	111.90	45 62	24 52	22 62	39 44	31 10	48 51	70 02	35 07	223 70	126 60	**223.70**
Runoff (mm)		146	119	98	63	47	33	29	32	39	72	102	143	**923**
Rainfall (mm)		179	121	133	80	91	87	93	108	120	142	168	183	**1505**

Factors affecting flow regime: SRP
Station type: CC

1990 runoff is 85% of previous mean rainfall 99%

049001 Camel at Denby 1990

Measuring authority: NRA-SW
First year: 1964
Grid reference: 20 (SX) 017 682
Level stn. (m OD) 4 60
Catchment area (sq km) 208 8
Max alt. (m OD) 420

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13 610	23 260	5.574	2 392	1 380	1 325	1 878	1 098	0.957	2 763	9 246	8 276	**5.865**
(m^3s^{-1}):	Peak	42 35	71 22	12 30	3 85	2 39	2 83	7 00	3 08	2 87	9 06	25.44	22 92	**71.22**
Runoff (mm)		175	269	72	30	18	16	24	14	12	35	115	106	**886**
Rainfall (mm)		216	246	32	56	35	117	82	75	71	162	150	137	**1379**

Monthly and yearly statistics for previous record (Sep 1964 to Dec 1989)

Mean	Avg.	11 150	9 560	7 162	4.600	3 280	2 396	2 236	2 476	2 945	5.557	7 810	10 910	**5.827**
flows	Low	4 833	4 249	2 835	2 081	0 960	0 888	0 582	0.421	0 798	0 882	1 371	6 135	**4.081**
(m^3s^{-1})	High	19 600	20 940	16 420	9.395	8 491	5 463	7 322	7 858	11 920	16 640	17.990	19 110	**8.165**
Peak flow (m^3s^{-1})		73 18	80 21	94.75	35 42	23 98	45 32	40 59	63 98	125 80	92 14	94 75	227.90	**227.90**
Runoff (mm)		143	112	92	57	42	30	29	32	37	71	97	140	**881**
Rainfall (mm)		167	108	121	73	83	85	92	102	115	139	151	165	**1401**

Factors affecting flow regime: SRP E
Station type: VA

1990 runoff is 101% of previous mean rainfall 98%

049002 Hayle at St Erth 1990

Measuring authority: NRA-SW
First year: 1957
Grid reference: 10 (SW) 549 342
Level stn. (m OD) 7 00
Catchment area (sq km) 48 9
Max alt. (m OD) 238

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	2.313	4 219	1 436	0 676	0 399	0 333	0 278	0 231	0 209	0 223	0 392	0 898	**0.947**
(m^3s^{-1}):	Peak	5 95	7.28	2.45	0 87	0 53	0 46	0 49	0 34	0 29	0 33	1 04	1 80	**7.28**
Runoff (mm)		127	209	79	36	22	18	15	13	11	12	21	49	**611**
Rainfall (mm)		175	179	21	46	19	89	70	46	47	99	110	124	**1025**

Monthly and yearly statistics for previous record (Oct 1957 to Dec 1989—incomplete or missing months total 9.3 years)

Mean	Avg.	1.945	2 027	1 591	1 099	0 691	0.510	0 401	0 342	0 356	0 499	0.923	1.560	**0 990**
flows	Low	0.746	0 863	0 810	0 573	0 445	0 335	0 237	0 167	0 193	0 179	0 181	0.503	**0.653**
(m^3s^{-1})	High	3 009	3.426	2 582	1 643	1 464	0 859	1 063	0 743	1 067	1 180	2 297	2 584	**1.265**
Peak flow (m^3s^{-1})		9 16	7 38	5 83	3 87	2 36	1 72	1.99	2 27	1 88	4 02	3 81	6 31	**9.16**
Runoff (mm)		107	101	87	58	38	27	22	19	19	27	49	85	**639**
Rainfall (mm)		136	105	105	55	63	66	58	75	90	108	121	136	**1118**

Factors affecting flow regime: G I
Station type: CC

1990 runoff is 96% of previous mean rainfall 92%

050002 Torridge at Torrington 1990

Measuring authority: NRA-SW
First year: 1962
Grid reference: 21 (SS) 500 185
Level stn. (m OD): 13.90
Catchment area (sq km): 663.0
Max alt. (m OD): 621

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	43.300	63.960	9.073	3.101	1.398	1.653	3.916	1.400	1.406	12.860	22.690	25.910	**15.589**
(m^3s^{-1})	Peak	190.70	209.20	52.61	7.57	2.41	11.92	19.07	9.76	21.83	61.40	105.00	153.10	**209.20**
Runoff (mm)		175	233	37	12	6	6	16	6	6	52	89	105	**742**
Rainfall (mm)		218	252	30	50	31	118	64	72	77	151	100	139	**1302**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989)

Mean	Avg	29.870	24.030	19.030	11.100	7.967	4.678	4.297	5.093	7.061	16.100	26.290	31.230	**15.530**
flows	Low	5.018	4.695	5.792	3.082	1.594	1.092	0.443	0.252	0.954	0.668	3.798	10.270	**8.988**
(m^3s^{-1})	High	57.510	47.590	51.280	28.120	31.290	14.960	21.540	19.690	45.910	49.230	55.730	64.530	**21.036**
Peak flow (m^3s^{-1})		391.10	294.40	535.60	164.40	205.70	181.30	310.60	228.50	415.00	276.40	370.40	730.00	**730.00**
Runoff (mm)		121	88	77	43	32	18	17	21	28	65	103	126	**739**
Rainfall (mm)		128	89	101	66	73	72	74	85	97	116	133	132	**1166**

Factors affecting flow regime: SRP EI
Station type: VA
1990 runoff is 100% of previous mean
rainfall 112%

052007 Parrett at Chiselborough 1990

Measuring authority: NRA-W
First year: 1966
Grid reference: 31 (ST) 461 144
Level stn. (m OD): 20.70
Catchment area (sq km): 74.8
Max alt. (m OD): 219

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.885	6.120	0.738	0.431	0.292	0.244	0.204	0.164	0.170	0.209	0.243	0.409	**1.060**
(m^3s^{-1})	Peak	22.08	30.70	1.95	0.94	0.48	0.43	0.69	0.49	0.79	1.21	1.03	1.82	**30.70**
Runoff (mm)		139	198	26	15	10	8	7	6	6	7	8	15	**447**
Rainfall (mm)		156	185	12	34	14	51	32	34	52	66	50	70	**756**

Monthly and yearly statistics for previous record (Aug 1966 to Dec 1989)

Mean	Avg	2.360	1.910	1.580	0.858	0.728	0.495	0.354	0.353	0.434	0.979	1.300	2.146	**1.123**
flows	Low	0.258	0.593	0.523	0.285	0.206	0.130	0.106	0.090	0.145	0.186	0.218	0.523	**0.564**
(m^3s^{-1})	High	4.914	3.865	3.055	1.867	2.048	1.053	0.921	0.988	2.225	4.819	3.789	4.219	**1.534**
Peak flow (m^3s^{-1})		36.38	27.14	27.46	21.20	57.21	12.81	16.14	23.88	15.29	27.22	29.12	44.94	**57.21**
Runoff (mm)		85	62	57	30	26	17	13	13	15	35	45	77	**474**
Rainfall (mm)		104	73	83	46	70	63	55	68	74	89	84	108	**917**

Factors affecting flow regime: E
Station type: C
1990 runoff is 94% of previous mean
rainfall 82%

052010 Brue at Lovington 1990

Measuring authority: NRA-W
First year: 1964
Grid reference: 31 (ST) 590 318
Level stn. (m OD): 19.80
Catchment area (sq km): 135.2
Max alt. (m OD): 260

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.913	6.961	1.288	0.645	0.381	0.362	0.264	0.232	0.218	0.444	0.893	2.164	**1.446**
(m^3s^{-1})	Peak	17.09	53.57	3.18	1.35	0.53	1.05	0.49	0.63	1.07	1.80	4.92	11.63	**53.57**
Runoff (mm)		78	125	26	12	8	7	5	5	4	9	17	43	**337**
Rainfall (mm)		114	144	19	44	5	80	41	51	58	105	56	89	**806**

Monthly and yearly statistics for previous record (Oct 1964 to Dec 1989)

Mean	Avg	3.511	3.231	2.619	1.589	1.202	0.793	0.843	0.782	0.802	1.403	2.213	3.490	**1.869**
flows	Low	0.743	0.910	0.844	0.526	0.313	0.217	0.150	0.130	0.247	0.190	0.407	1.034	**1.153**
(m^3s^{-1})	High	5.752	6.872	5.263	3.352	3.554	2.203	4.081	2.449	4.873	4.380	4.883	6.158	**2.427**
Peak flow (m^3s^{-1})		47.28	47.07	43.49	27.19	95.48	35.46	83.00	48.42	69.42	61.06	74.62	61.06	**95.48**
Runoff (mm)		70	58	52	30	24	15	17	15	15	28	42	69	**436**
Rainfall (mm)		87	66	76	52	68	66	70	73	76	76	85	95	**890**

Factors affecting flow regime: N
Station type: C VA
1990 runoff is 77% of previous mean
rainfall 91%

053004 Chew at Compton Dando 1990

Measuring authority: NRA W
First year: 1958
Grid reference: 31 (ST) 648 647
Level stn. (m OD): 16.80
Catchment area (sq km): 129.5
Max alt. (m OD): 305

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.799	3.300	0.895	0.533	0.418	0.420	0.376	0.362	0.347	0.365	0.507	0.753	**0.824**
(m^3s^{-1})	Peak	11.94	16.79	1.92	1.13	0.51	0.66	0.66	0.53	0.73	0.98	1.43	3.89	**16.79**
Runoff (mm)		37	62	19	11	9	8	8	7	7	8	10	16	**201**
Rainfall (mm)		137	146	19	37	6	91	59	59	55	106	65	97	**877**

Monthly and yearly statistics for previous record (Mar 1958 to Dec 1989—incomplete or missing months total 1.0 years)

Mean	Avg	1.871	1.715	1.426	1.027	0.833	0.602	0.464	0.460	0.571	0.820	1.226	1.752	**1.061**
flows	Low	0.444	0.557	0.410	0.469	0.333	0.287	0.243	0.195	0.232	0.300	0.264	0.622	**0.540**
(m^3s^{-1})	High	3.935	4.166	4.210	2.185	2.493	1.211	0.811	1.245	2.135	3.251	3.898	5.017	**1.766**
Peak flow (m^3s^{-1})		39.43	48.99	50.00	14.19	67.50	13.00	6.23	6.09	59.26	49.56	38.83	63.78	**67.50**
Runoff (mm)		39	32	30	20	17	12	10	10	11	17	25	36	**259**
Rainfall (mm)		101	70	82	61	72	69	70	84	92	93	101	114	**1009**

Factors affecting flow regime: S P
Station type: FL
1990 runoff is 78% of previous mean
rainfall 87%

053006 Frome(Bristol) at Frenchay 1990

Measuring authority: NRA-W
First year: 1961
Grid reference: 31 (ST) 637 772
Level stn. (m OD): 20 00
Catchment area (sq km): 148.9
Max alt. (m OD): 193

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 405	5 888	0 901	0 488	0 229	0 391	0 290	0 233	0 211	0 429	0 410	0 993	1.125
(m^3s^{-1}):	Peak	17 05	21.59	3.30	1.75	0 59	6 52	2 98	2 56	2 98	4 50	1 82	7 14	21.59
Runoff (mm)		61	96	16	9	4	7	5	4	4	8	7	18	238
Rainfall (mm)		105	126	16	30	9	76	37	49	42	78	38	72	678

Monthly and yearly statistics for previous record (Sep 1961 to Dec 1989)

Mean	Avg	3 359	2 831	2 414	1 429	1 179	0.779	0 610	0 544	0 728	1 243	2 205	3 139	1.701
flows	Low	0 670	0 613	0 636	0 476	0 290	0 220	0 122	0 139	0 208	0 162	0 211	0 820	0.804
(m^3s^{-1})	High	6.152	6 040	5.762	3 434	5 028	2 973	3 516	2 398	5 113	4 691	5.434	9 807	2.255
Peak flow (m^3s^{-1})		35 05	41.09	33 84	29 63	49 00	29 01	70 79	12 75	29 73	42 93	39.90	66 55	70 79
Runoff (mm)		60	46	43	25	21	14	11	10	13	22	38	56	360
Rainfall (mm)		75	53	67	49	65	62	55	70	73	72	76	86	803

Factors affecting flow regime: N
Station type: FL

1990 runoff is 66% of previous mean rainfall 84%

053007 Frome(Somerset) at Tellisford 1990

Measuring authority: NRA-W
First year: 1961
Grid reference: 31 (ST) 805 564
Level stn. (m OD): 35.10
Catchment area (sq km): 261 6
Max alt. (m OD): 305

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 798	13 720	2 591	1 651	0 893	0 717	0 699	0 607	0 522	0 975	1 805	3 370	2.876
(m^3s^{-1}):	Peak	30 59	53 90	7 43	2 35	1 63	1 66	1 42	1 91	1 94	4.78	6 15	16 98	53.90
Runoff (mm)		80	127	27	16	9	7	7	6	5	10	18	35	347
Rainfall (mm)		140	159	18	43	6	84	48	59	51	102	62	101	873

Monthly and yearly statistics for previous record (Sep 1961 to Dec 1989)

Mean	Avg	6 829	6 272	5 608	3 734	2 713	1 833	1 410	1 443	1 730	2.800	4.526	6 482	3.772
flows	Low	1 684	2 072	1 938	1 510	0 843	0 518	0 329	0 291	0 573	0 612	0 962	2 627	2.334
(m^3s^{-1})	High	12 340	12 460	12 690	8 314	6 317	4 812	4 931	4 605	7 459	8 841	10 730	14 860	4 872
Peak flow (m^3s^{-1})		77 99	64.75	68.83	57 51	98 80	37.52	108 10	82 49	71 03	59 90	84 58	83 64	108.10
Runoff (mm)		70	58	57	37	28	18	14	15	17	29	45	66	455
Rainfall (mm)		95	68	88	61	75	65	64	79	86	84	94	105	964

Factors affecting flow regime: PG
Station type: FL

1990 runoff is 76% of previous mean rainfall 91%

054012 Tern at Walcot 1990

Measuring authority: NRA-ST
First year: 1960
Grid reference: 33 (SJ) 592 123
Level stn. (m OD): 44 60
Catchment area (sq km): 852 0
Max alt. (m OD): 366

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14 810	15 370	6 741	4 339	2.903	2 561	2 182	1 939	2 357	3 023	4 095	7 583	5.604
(m^3s^{-1}):	Peak	60 05	43 88	23 16	6 13	4 28	3 82	3 20	2 85	4 85	4 90	8 35	25 18	60.05
Runoff (mm)		47	44	21	13	9	8	7	6	7	10	12	24	207
Rainfall (mm)		108	79	15	30	20	55	28	40	62	63	58	75	633

Monthly and yearly statistics for previous record (Oct 1960 to Dec 1989)

Mean	Avg	11 060	10 220	8 966	7 482	6 462	4 612	3.901	3 928	3 965	5 603	7 950	10 700	7.059
flows	Low	4 018	4 002	4 800	3.557	2 917	2 199	1 393	1 171	1 680	2 227	2.538	3 563	3.757
(m^3s^{-1})	High	20 320	22 280	17.810	12.320	22 390	9 069	14 060	6 655	9 490	16 920	21 830	24 950	10.266
Peak flow (m^3s^{-1})		47.51	45 98	40.53	40 73	40 35	27 00	48 71	38 53	32 17	37 59	44 54	55 82	55.82
Runoff (mm)		35	29	28	23	20	14	12	12	12	18	24	34	261
Rainfall (mm)		59	45	55	51	63	57	54	64	61	60	70	68	707

Factors affecting flow regime: GEI
Station type: FV

1990 runoff is 79% of previous mean rainfall 90%

054019 Avon at Stareton 1990

Measuring authority: NRA-ST
First year: 1962
Grid reference: 42 (SP) 333 715
Level stn. (m OD): 54.70
Catchment area (sq km): 347 0
Max alt. (m OD): 214

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 976	8.235	1.608	1 092	0 531	0 700	0 481	0 386	0 414	0 882	0 932	1 828	1.713
(m^3s^{-1}):	Peak	14.06	31.85	3 73	1 95	0 76	2 10	1 36	0 89	0 98	2 50	2 89	7 45	31.85
Runoff (mm)		31	57	12	8	4	5	4	3	3	7	7	14	156
Rainfall (mm)		65	83	15	32	8	50	29	27	34	87	45	60	535

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989)

Mean	Avg	4.498	4 423	4 289	2 921	2 112	1 412	1 012	1 055	1 005	1 550	2 364	4 010	2.547
flows	Low	0 798	0 777	0 545	0 485	0 474	0 368	0 247	0 356	0 442	0 507	0 549	0 667	1.094
(m^3s^{-1})	High	9 678	12.890	8 577	6 356	6 149	4 862	5 379	3 332	2 858	5 274	5 587	10 400	3.588
Peak flow (m^3s^{-1})		55.83	59 60	55 89	42 67	39 05	42 89	71 36	26 08	16 59	32 89	34 11	56 28	71.36
Runoff (mm)		35	31	33	22	16	11	8	8	8	12	18	31	232
Rainfall (mm)		54	44	56	49	57	61	54	69	53	52	57	63	669

Factors affecting flow regime: S EI
Station type: C

1990 runoff is 67% of previous mean rainfall 80%

054020 Perry at Yeaton — 1990

Measuring authority NRA-ST
First year 1963
Grid reference 33 (SJ) 434 192
Level stn (m OD) 61 30
Catchment area (sq km) 180 8
Max alt (m OD) 356

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3 714	5 011	1 819	1 062	0 666	0 553	0 468	0 391	0 379	0 482	0 694	1 482	1.372
(m^3s^{-1})	Peak	14 26	17 66	7 05	1 23	1 10	0 77	0 78	0 62	0 67	0 79	1.45	7 39	17.66
Runoff (mm)		55	67	27	15	10	8	7	6	5	7	10	22	239
Rainfall (mm)		122	108	15	24	29	59	25	37	52	71	55	91	688

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989)

Mean	Avg	2 857	2.704	2 373	1 788	1 407	0.950	0 728	0 710	0 714	1 126	1 757	2 628	1.641
flows	Low	0 901	0 859	1 257	0 742	0 583	0 379	0 271	0 208	0 350	0 412	0 427	0.848	0.809
(m^3s^{-1})	High	4 870	6 507	4 265	3 041	4 232	2 046	2 735	1 416	1 785	3.308	3 103	6 244	2.335
Peak flow (m^3s^{-1})		14 23	11 29	11 12	10 83	10 41	8 49	7 87	5 49	7 32	7 52	10 02	12 57	14.23
Runoff (mm)		42	37	35	26	21	14	11	11	10	17	25	39	286
Rainfall (mm)		67	53	63	50	63	57	57	63	64	66	78	79	760

Factors affecting flow regime GEI
Station type C

1990 runoff is 84% of previous mean
rainfall 91%

054022 Severn at Plynlimon flume — 1990

Measuring authority IH
First year 1953
Grid reference 22 (SN) 853 872
Level stn (m OD) 331 00
Catchment area (sq km) 8.7
Max alt (m OD) 740

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 259	1 249	0 380	0 251	0 115	0 196	0 314	0 256	0 334	0 834	0 792	0 945	0.574
(m^3s^{-1})	Peak	8 02	10 79	2 90	1 48	0.27	1 76	4 44	6 57	4 99	10 39	7 04	11 71	11 71
Runoff (mm)		388	347	117	75	36	58	97	79	100	257	236	291	2080
Rainfall (mm)		487	463	129	120	46	175	107	194	176	347	234	361	2839*

Monthly and yearly statistics for previous record (Oct 1953 to Dec 1989—incomplete or missing months total 10.4 years)

Mean	Avg	0 754	0 573	0 626	0 337	0 237	0 221	0 279	0 396	0 512	0 633	0 771	0 764	0.509
flows	Low	0 363	0 136	0 171	0 046	0 046	0 045	0 043	0 032	0 073	0 059	0 268	0 174	0.317
(m^3s^{-1})	High	1 567	1 104	1 566	0 878	0 818	0 638	0 754	0 935	1 092	1 464	1.420	1 313	0 646
Peak flow (m^3s^{-1})		14 49	13 90	14 53	11 64	9 86	10 66	8 83	32 22	15 38	18 85	17 77	17 11	32.22
Runoff (mm)		232	161	193	101	73	66	86	122	152	195	230	235	1845
Rainfall (mm)		283	180	218	129	131	135	151	184	223	248	277	281	2440

Factors affecting flow regime N
Station type FL
*Provisional

1990 runoff is 113% of previous mean
rainfall 116%

054024 Worfe at Burcote — 1990

Measuring authority NRA-ST
First year 1969
Grid reference 32 (SO) 747 953
Level stn (m OD) 33 20
Catchment area (sq km) 258 0
Max alt (m OD) 120

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	2 342	2 775	1 328	0 854	0 517	0 480	0 304	0.276	0 389	0 591	0.709	1 038	0.956
(m^3s^{-1})	Peak	9 67	7 49	3 81	1 27	1 29	1 05	0 77	0 84	1 17	1 56	1 59	2 56	9.62
Runoff (mm)		24	26	14	9	5	5	3	3	4	6	7	11	117
Rainfall (mm)		103	86	17	27	24	48	24	39	43	72	47	74	604

Monthly and yearly statistics for previous record (Apr 1969 to Dec 1989)

Mean	Avg	1 881	1 861	1.699	1 500	1 234	0 883	0 616	0 677	0 675	0 844	1 135	1.558	1.210
flows	Low	0 616	0 669	0 772	0 547	0 426	0 256	0 101	0 094	0 345	0 423	0 499	0.532	0.687
(m^3s^{-1})	High	3 144	3 802	3 171	2 491	4 490	1 527	1 293	1 111	0 887	1.535	2 235	2.551	1.519
Peak flow (m^3s^{-1})		10 84	10 56	6 86	7 73	16 09	5 65	4 06	4 32	5 10	3 87	5 88	16 00	16.09
Runoff (mm)		20	18	18	15	13	9	6	7	7	9	11	16	148
Rainfall (mm)*		64	50	58	48	62	55	46	64	63	53	66	64	693

*(1969-1985)

Factors affecting flow regime PGEI
Station type C

1990 runoff is 79% of previous mean
rainfall 87%

054034 Dowles Brook at Dowles — 1990

Measuring authority NRA-ST
First year 1971
Grid reference 32 (SO) 768 764
Level stn (m OD) 24 20
Catchment area (sq km) 40 8
Max alt (m OD) 230

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 127	1 420	0 278	0 116	0 073	0 051	0 027	0 022	0 020	0 053	0 070	0 259	0.286
(m^3s^{-1})	Peak	16 57	9 67	1 10	0 20	0 32	0 13	0 06	0 06	0 05	0 42	0 45	1 41	16.57
Runoff (mm)		74	84	18	7	5	3	2	1	1	3	4	17	221
Rainfall (mm)		113	103	16	28	22	50	19	33	29	86	45	71	615

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1989—incomplete or missing months total 3 2 years)

Mean	Avg	0 788	0 768	0 713	0 481	0 318	0 203	0 091	0 068	0 131	0 219	0 296	0 681	0.395
flows	Low	0 097	0 220	0 283	0 116	0 073	0 033	0 017	0 019	0 036	0 036	0 046	0 072	0.240
(m^3s^{-1})	High	1 617	1 738	1 637	1 090	1 016	0 691	0 254	0 130	0 880	1 047	0 765	1 414	0.508
Peak flow (m^3s^{-1})		15 38	9 63	12 43	12 90	12 14	16 28	4 73	2 69	19 35	5 09	7 72	18 90	19.35
Runoff (mm)		52	46	47	31	21	13	6	4	8	14	19	45	308
Rainfall (mm)		68	53	67	51	56	58	54	60	67	62	56	80	732

Factors affecting flow regime N
Station type FV

1990 runoff is 72% of previous mean
rainfall 84%

054038 Tanat at Llanyblodwel 1990

Measuring authority: NRA-ST
First year: 1973
Grid reference 33 (SJ) 252 225
Level stn. (m OD) 77.00
Catchment area (sq km): 229.0
Max alt. (m OD): 827

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	15.780	21.460	5.327	2.177	1.031	0.759	1.491	0.412	0.655	3.923	6.361	13.780	6.010
(m^3s^{-1})	Peak	57.68	76.47	23.34	5.44	2.63	5.69	9.65	2.64	4.16	19.68	15.79	69.77	76.47
Runoff (mm)		185	227	62	25	12	9	17	5	7	46	72	161	828
Rainfall (mm)		243	238	34	48	36	84	48	62	64	133	85	194	1269

Monthly and yearly statistics for previous record (Jun 1973 to Dec 1989—incomplete or missing months total 0.4 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	11.410	9.574	9.178	5.513	3.349	2.271	1.322	2.541	3.441	7.121	9.668	11.710	6.415
flows	Low	5.037	3.707	2.693	1.392	0.867	0.699	0.348	0.190	0.520	1.701	2.895	5.738	4.185
(m^3s^{-1})	High	19.220	19.900	17.800	9.686	10.250	4.660	2.589	7.609	9.885	15.020	17.370	21.410	7.510
Peak flow (m^3s^{-1})		93.99	64.77	85.77	39.85	31.27	56.87	15.68	118.20	69.56	82.17	76.12	87.99	118.20
Runoff (mm)		134	102	107	62	39	26	15	30	39	83	109	137	884
Rainfall (mm)		130	93	116	66	76	68	61	91	107	122	133	149	1212

Factors affecting flow regime: N EI
Station type: VA
1990 runoff is 94% of previous mean
rainfall 105%

055008 Wye at Cefn Brwyn 1990

Measuring authority: IH
First year: 1951
Grid reference 22 (SN) 829 838
Level stn. (m OD): 341.00
Catchment area (sq km): 10.6
Max alt. (m OD): 740

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.454	1.415	0.472	0.347	0.101	0.287	0.416	0.345	0.523	0.992	0.951	1.146	0.700
(m^3s^{-1})	Peak	13.03	12.00	4.34	2.77	0.37	2.39	8.42	12.50	9.41	16.22	9.11	18.26	18.26
Runoff (mm)		369	324	120	85	26	71	106	88	128	252	234	291	2093
Rainfall (mm)		441	410	124	128	46	179	115	203	183	318	236	361	2744*

Monthly and yearly statistics for previous record (Aug 1951 to Dec 1989—incomplete or missing months total 2.5 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	0.955	0.734	0.702	0.516	0.385	0.345	0.431	0.568	0.673	0.821	1.022	1.107	0.689
flows	Low	0.492	0.136	0.206	0.064	0.054	0.074	0.053	0.036	0.050	0.091	0.376	0.198	0.447
(m^3s^{-1})	High	1.870	1.486	1.735	1.312	1.144	0.954	1.264	1.478	1.478	2.031	1.761	2.655	0.994
Peak flow (m^3s^{-1})		23.47	19.20	23.37	19.12	17.89	25.49	19.11	48.87	22.64	27.68	29.15	32.00	48.87
Runoff (mm)		242	170	178	127	98	85	109	144	165	209	251	281	2059
Rainfall (mm)		260	168	204	145	134	139	162	195	206	244	268	306	2431

Factors affecting flow regime: N
Station type: CC
*Provisional
1990 runoff is 102% of previous mean
rainfall 113%

055013 Arrow at Titley Mill 1990

Measuring authority: NRA-WEL
First year: 1966
Grid reference 32 (SO) 328 585
Level stn. (m OD) 129.00
Catchment area (sq km): 126.4
Max alt. (m OD) 542

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	6.231	8.763	2.090	0.633	0.355	0.256	0.228	0.183	0.135	0.255	1.378	2.646	1.888
(m^3s^{-1})	Peak	53.06	42.40	8.13	0.88	0.67	0.98	0.38	0.19	0.36	1.09	6.31	13.60	53.06
Runoff (mm)		132	168	44	13	8	5	5	4	3	5	28	56	471
Rainfall (mm)		189	206	26	34	27	76	29	23	56	121	83	92	982

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	4.695	4.022	3.590	2.309	1.745	1.116	0.724	0.629	0.855	2.027	3.090	4.333	2.422
flows	Low	1.528	1.912	1.629	0.962	0.526	0.332	0.210	0.154	0.188	0.294	0.662	1.366	1.309
(m^3s^{-1})	High	9.003	7.677	8.933	5.028	5.001	2.559	3.842	1.546	2.459	6.916	6.625	8.464	3.418
Peak flow (m^3s^{-1})		101.10	39.94	57.85	37.95	32.49	13.09	30.68	24.79	18.85	36.45	28.98	63.34	101:10
Runoff (mm)		99	78	76	47	37	23	15	13	18	43	63	92	605
Rainfall (mm)		108	80	90	59	74	65	55	77	90	96	98	113	1005

Factors affecting flow regime: N
Station type: VA
1990 runoff is 78% of previous mean
rainfall 96%

055014 Lugg at Byton 1990

Measuring authority: NRA-WEL
First year: 1966
Grid reference: 32 (SO) 364 647
Level stn. (m OD): 124.10
Catchment area (sq km): 203.3
Max alt. (m OD): 660

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	10.030	16.530	4.444	1.626	1.053	0.794	0.619	0.456	0.420	0.769	2.593	4.334	3.558
(m^3s^{-1})	Peak	35.63	34.05	11.92	2.12	1.59	1.16	0.93	0.54	0.67	2.51	7.22	11.16	35.63
Runoff (mm)		132	197	59	21	14	10	8	6	5	10	33	57	552
Rainfall (mm)		187	194	23	32	31	74	28	37	57	133	82	116	994

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	7.368	6.752	5.975	4.236	3.145	2.023	1.420	1.166	1.321	2.752	4.431	6.525	3.915
flows	Low	2.604	2.630	2.947	2.016	1.186	0.772	0.557	0.414	0.518	0.657	1.219	2.443	2.321
(m^3s^{-1})	High	11.940	12.870	13.980	8.648	7.994	4.113	5.253	1.997	3.079	7.962	8.774	11.560	4.954
Peak flow (m^3s^{-1})		54.27	37.53	33.24	30.08	45.56	14.18	26.16	13.32	12.46	28.51	27.22	37.49	54.27
Runoff (mm)		97	81	79	54	41	26	19	15	17	36	56	86	608
Rainfall (mm)		113	82	93	64	78	64	57	76	89	95	99	114	1024

Factors affecting flow regime
Station type: FVVA
1990 runoff is 91% of previous mean
rainfall 97%

055018 Frome at Yarkhill 1990

Measuring authority: NRA-WEL
First year: 1968
Grid reference: 32 (SO) 615 428
Level stn (m OD): 55.40
Catchment area (sq km): 144.0
Max alt (m OD): 244

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	3.351	4.550	0.991	0.571	0.412	0.220	0.134	0.113	0.121	0.143	0.119	0.296	**0.896**
(m^3s^{-1})	Peak	24.04	23.40	3.77	0.89	0.72	0.33	0.27	0.18	0.25	0.60	0.27	1.93	**24.04**
Runoff (mm)		62	76	18	10	8	4	2	2	2	3	2	6	**196**
Rainfall (mm)		118	121	17	31	22	52	18	23	32	83	39	74	**630**

Monthly and yearly statistics for previous record (Oct 1968 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg	2.633	2.466	2.137	1.348	1.090	0.636	0.360	0.327	0.308	0.482	0.984	2.034	**1.229**
flows	Low	0.214	0.389	0.560	0.359	0.274	0.146	0.091	0.063	0.096	0.149	0.171	0.210	**0.672**
(m^3s^{-1})	High	4.668	5.456	5.176	3.299	3.972	1.349	0.630	0.759	0.970	2.405	2.266	4.230	**1.628**
Peak flow (m^3s^{-1})		23.84	24.99	24.28	24.57	25.89	16.99	5.96	9.61	15.68	10.34	18.51	25.14	**25.89**
Runoff (mm)		49	42	40	24	20	11	7	6	6	9	18	38	**269**
Rainfall (mm)		72	51	63	46	60	57	47	66	60	59	64	74	**719**

Factors affecting flow regime: E
Station type: VA

1990 runoff is 73% of previous mean
rainfall 88%

055023 Wye at Redbrook 1990

Measuring authority: NRA-WEL
First year: 1936
Grid reference: 32 (SO) 528 110
Level stn (m OD): 9.20
Catchment area (sq km): 4010.0
Max alt (m OD): 752

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	229.500	333.900	82.700	27.080	16.620	13.450	15.250			35.860	67.090	89.540	
(m^3s^{-1})	Peak	748.00	696.60	282.30	54.37	33.59	25.94	56.37			137.20	193.00	297.60	**748.00**
Runoff (mm)		153	201	55	18	11	9	10			24	43	60	
Rainfall (mm)		200	196	29	39	28	76	33	35	60	124	75	121	**1016**

Monthly and yearly statistics for previous record (Oct 1936 to Dec 1989)

Mean	Avg	130.700	120.500	93.530	65.430	44.320	34.350	24.380	27.890	39.490	60.300	101.000	124.400	**71.962**
flows	Low	25.050	30.760	22.110	17.930	12.340	10.970	7.426	5.180	7.271	9.582	31.730	46.890	**39.916**
(m^3s^{-1})	High	241.900	234.000	325.400	143.600	125.000	131.600	95.830	83.680	174.000	174.700	252.400	246.000	**113.382**
Peak flow (m^3s^{-1})		688.80	700.40	905.40	493.30	387.90	467.20	368.30	347.80	531.70	472.90	600.30	812.70	**905.40**
Runoff (mm)		87	73	62	42	30	22	16	19	26	40	65	83	**566**
Rainfall (mm)		110	78	78	63	74	62	67	83	87	96	111	114	**1023**

Factors affecting flow regime: S P E
Station type: VA

1990 runoff is % of previous mean
rainfall 99%

056013 Yscir at Pontaryscir 1990

Measuring authority: NRA WEL
First year: 1972
Grid reference: 32 (SO) 003 304
Level stn (m OD): 161.20
Catchment area (sq km): 62.8
Max alt (m OD): 474

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.272	5.914	1.521	0.740	0.410	0.309	0.415	0.179	0.251	1.767	2.490	3.395	**1.866**
(m^3s^{-1})	Peak	24.17	34.71	5.54	2.26	1.64	0.96	2.18	0.40	5.26	10.03	13.07	22.38	**34.71**
Runoff (mm)		225	228	65	31	18	13	18	8	10	75	103	145	**937**
Rainfall (mm)		285	267	46	62	40	107	52	52	85	160	110	184	**1450**

Monthly and yearly statistics for previous record (May 1972 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	3.401	2.653	2.682	1.480	1.021	0.739	0.512	0.706	1.134	2.182	3.005	3.591	**1.924**
flows	Low	1.146	0.998	0.852	0.431	0.269	0.214	0.150	0.104	0.261	0.214	0.941	1.540	**1.286**
(m^3s^{-1})	High	5.795	4.959	6.303	3.211	3.041	1.788	1.758	2.964	3.947	4.279	5.291	6.324	**2.465**
Peak flow (m^3s^{-1})		36.98	31.78	40.55	13.74	14.81	14.33	11.06	30.69	21.44	85.01	34.02	59.93	**85.01**
Runoff (mm)		145	103	114	61	44	31	22	30	47	93	124	153	**967**
Rainfall (mm)*		160	106	141	71	85	73	77	100	132	149	154	185	**1433**

*(1973-1989)

Factors affecting flow regime: N
Station type: C

1990 runoff is 97% of previous mean
rainfall 101%

057008 Rhymney at Llanedeyrn 1990

Measuring authority: NRA WEL
First year: 1973
Grid reference: 31 (ST) 225 821
Level stn (m OD): 11.80
Catchment area (sq km): 178.7
Max alt (m OD): 617

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	15.130	22.510	4.207	1.204	0.611	0.903	1.127	0.453	0.569	2.923	4.544	5.638	**4.878**
(m^3s^{-1})	Peak	77.08	156.70	15.10	1.86	5.18	8.77	8.39	2.86	10.27	27.93	42.22	85.03	**156.70**
Runoff (mm)		227	305	63	17	9	13	17	7	8	44	66	85	**860**
Rainfall (mm)		280	309	37	33	29	138	59	58	81	164	108	148	**1444**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1989)

Mean	Avg	9.394	8.012	7.427	4.354	3.046	2.040	1.571	2.532	3.574	6.161	7.873	9.408	**5.441**
flows	Low	3.313	3.199	2.889	1.754	1.276	0.873	0.602	0.571	0.913	0.748	2.355	3.218	**2.903**
(m^3s^{-1})	High	17.500	15.620	20.960	9.695	8.340	4.604	4.235	10.450	11.500	13.700	16.560	15.730	**7.153**
Peak flow (m^3s^{-1})		108.30	88.25	110.50	41.55	31.31	54.30	27.39	87.41	101.60	118.50	113.50	147.30	**147.30**
Runoff (mm)		141	109	111	63	46	30	24	38	52	92	114	141	**961**
Rainfall (mm)		158	113	134	70	82	68	72	103	136	151	145	172	**1404**

Factors affecting flow regime: S PGE
Station type: FVVA

1990 runoff is 90% of previous mean
rainfall 103%

058006 Mellte at Pontneddfechan 1990

Measuring authority: NRA-WEL
First year: 1971
Grid reference: 22 (SN) 915 082
Level stn. (m OD): 90 00
Catchment area (sq km): 65 8
Max alt. (m OD): 734

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	9.025	9.518	2.209	1 050	0.578	1 235	1.375	0 679	0.946	3 621	3 155	4 329	3.108
(m^3s^{-1}):	Peak	61.79	80.84	6.94	3 58	1 01	8.75	7.32	7.26	17 07	23.29	13.59	46 84	80.84
Runoff (mm)		367	350	90	41	24	49	56	28	37	147	124	176	1490
Rainfall (mm)		422	387	73	69	46	180	91	95	123	227	135	223	2071

Monthly and yearly statistics for previous record (Oct 1971 to Dec 1989—incomplete or missing months total 0.3 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	4.919	3.719	3.911	2.095	1.649	1 221	1 085	1.720	2.412	3.600	4 663	5 391	3.032
flows	Low	1 932	0.913	1.378	0.497	0 383	0 322	0.242	0 207	0 562	0.548	1.883	2.166	1.985
(m^3s^{-1})	High	8.274	7.231	10.670	5.095	4.283	3.559	4 269	6 802	6.876	6.305	9 471	8 739	3.814
Peak flow (m^3s^{-1})		82.30	66 12	82.30	39 02	21.45	33.56	44.98	58 52	81 01	96 78	106 80	127 60	127.60
Runoff (mm)		200	138	159	83	67	48	44	70	95	147	184	219	1454
Rainfall (mm)		241	155	198	103	120	106	103	152	175	214	232	259	2058

Factors affecting flow regime: S P
Station type: FVVA

1990 runoff is 102% of previous mean
rainfall 101%

060002 Cothi at Felin Mynachdy 1990

Measuring authority: NRA-WEL
First year: 1961
Grid reference: 22 (SN) 508 225
Level stn. (m OD): 16.10
Catchment area (sq km): 297 8
Max alt. (m OD): 484

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	36.790	40 210	6 015	2.885	1.401	1.532	3 548	1 245	1 940	10 120	13 170	15 600	11.038
(m^3s^{-1}):	Peak	139.10	176.10	22.54	10.80	4.95	5.36	15.97	5 04	18.77	37.00	42 36	109.50	176.10
Runoff (mm)		331	327	54	25	13	13	32	11	17	91	115	140	1169
Rainfall (mm)		335	289	49	57	37	124	78	79	105	177	127	192	1649

Monthly and yearly statistics for previous record (Oct 1961 to Dec 1989—incomplete or missing months total 2.0 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	17.850	13 930	13.320	8.773	6 509	4 255	3 537	6 258	7 915	15 430	18 250	20 360	11.363
flows	Low	2.990	3.708	2.821	1.444	0.835	0.824	0 418	0 362	1.500	1.610	7.211	6 723	7 174
(m^3s^{-1})	High	37 580	31.100	40 710	20.380	14.820	13 070	11 810	23.350	23.920	37.940	36 270	41.140	14 950
Peak flow (m^3s^{-1})		141.60	181.20	220.90	85.88	87 22	90 33	144.40	171 00	129.70	283.70	194 50	274 70	283.70
Runoff (mm)		161	114	120	76	59	37	32	56	69	139	159	183	1204
Rainfall (mm)		172	116	139	95	101	95	98	125	146	185	175	191	1638

Factors affecting flow regime: N
Station type: VA

1990 runoff is 97% of previous mean
rainfall 101%

060003 Taf at Clog-y-fran 1990

Measuring authority: NRA-WEL
First year: 1965
Grid reference: 22 (SN) 238 160
Level stn. (m OD): 7 00
Catchment area (sq km): 217.3
Max alt. (m OD): 395

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	16.710	18.250	4.607	1.735	1 016	0.951	1.015	0.745	0.688	3 176	10 410	9 973	5.696
(m^3s^{-1}):	Peak	72 47	62 16	11 94	2.31	2.75	3 07	5 72	2.55	3 31	15 39	60 98	42 18	72.47
Runoff (mm)		206	203	57	21	13	11	13	9	8	39	124	123	827
Rainfall (mm)		239	174	35	38	39	98	73	71	69	155	128	161	1280

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1989—incomplete or missing months total 1.2 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	13 130	10.730	8.972	5.746	3.770	2.551	1 899	2 948	3 809	9 392	11 680	13.890	7.366
flows	Low	4 835	3.858	3 796	2.179	1 207	0 781	0 375	0.363	0 983	1 018	3.757	5 075	4.672
(m^3s^{-1})	High	25 900	27 200	26.610	11 800	8 412	8 820	6 335	10.760	15 340	22.310	22.730	25 520	9.662
Peak flow (m^3s^{-1})		73 43	81.15	85.73	60 03	35.85	45.11	38 25	101 00	58 02	86.49	80 82	77.74	101 00
Runoff (mm)		162	120	111	69	46	30	23	38	45	116	139	171	1070
Rainfall (mm)		158	108	121	81	83	79	73	105	123	165	155	177	1428

Factors affecting flow regime: N
Station type: VA

1990 runoff is 77% of previous mean
rainfall 90%

060010 Tywi at Nantgaredig 1990

Measuring authority: NRA-WEL
First year: 1958
Grid reference: 22 (SN) 485 206
Level stn. (m OD): 7.80
Catchment area (sq km): 1090.4
Max alt. (m OD): 792

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	104 300	109.300	22.500	10 720	6.766	5 817	11.930	4.405	6.773	33.890	42.750	54 990	34 094
(m^3s^{-1}):	Peak	278.30	414 20	77 26	30 08	20.53	25.23	42.98	12.78	75.80	105 40	129 00	180 50	414.20
Runoff (mm)		256	242	55	25	17	14	29	11	16	83	102	135	988
Rainfall (mm)		317	276	48	62	37	117	69	77	104	169	123	193	1592

Monthly and yearly statistics for previous record (Oct 1958 to Dec 1989—incomplete or missing months total 2.1 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg.	66.090	47.940	42.130	31.970	22.710	15 060	12 850	20 210	27.200	49 080	60 680	66 140	38.488
flows	Low	9 473	12.210	9 657	6.201	4.503	3.736	2.752	2 699	1 523	8 708	23.910	19 470	22.516
(m^3s^{-1})	High	120.600	100 600	137 800	64.470	51.420	39.400	42.120	78 470	76.440	128.700	122 600	128 300	54.099
Peak flow (m^3s^{-1})		507.40	578.80	702 30	215.30	180 10	256 80	295 90	312 50	322 80	892 00	461.10	526 70	892.00
Runoff (mm)		162	107	103	76	56	36	32	50	65	121	144	162	1114
Rainfall (mm)		175	116	109	109	101	93	107	124	128	159	166	178	1565

Factors affecting flow regime:
Station type: FVVA

1990 runoff is 89% of previous mean
rainfall 102%

063001 Ystwyth at Pont Llolwyn 1990

Measuring authority: NRA-WEL
First year: 1963
Grid reference: 22 (SN) 591 774
Level stn. (m OD): 12.00
Catchment area (sq km): 169.6
Max alt. (m OD): 611

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	12 290	12.500	2.761	2.253	0 909	1 086	2.779	1.175	3 487	8.372	10 590	11 020	**5.729**
(m^3s^{-1})	Peak	47 04	64 64	16.01	12.83	1 80	4 60	36.20	22 22	38 46	74 06	57.66	86 87	**86.87**
Runoff (mm)		194	178	44	34	14	17	44	19	53	132	162	174	**1065**
Rainfall (mm)		257	209	56	73	39	117	71	99	133	192	169	212	**1627**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 0.4 years)

Mean	Avg.	9.284	6.875	6 371	4.356	3.198	2.511	2.596	3.412	4 394	7.288	9.214	10.760	**5.856**
flows	Low	2 268	2.283	2 816	0 960	0 577	0.625	0.422	0.180	0 882	0 558	3.757	2 219	**3.783**
(m^3s^{-1})	High	15.330	15 200	18 470	10.080	10.100	7.571	5 461	8 556	10 670	19.800	18 320	22 600	**7.774**
Peak flow (m^3s^{-1})		105 60	88.63	126.70	90 32	105 10	129.70	68.24	174 30	76 84	147.40	128.10	210 40	**210.40**
Runoff (mm)		147	99	101	67	50	38	41	54	67	115	141	170	**1090**
Rainfall (mm)		152	100	123	84	91	90	98	112	130	154	166	180	**1480**

Factors affecting flow regime:
Station type: VA

1990 runoff is 98% of previous mean rainfall 110%

064001 Dyfi at Dyfi Bridge 1990

Measuring authority: NRA-WEL
First year: 1962
Grid reference: 23 (SH) 745 019
Level stn. (m OD): 5.90
Catchment area (sq km): 471 3
Max alt. (m OD): 907

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	50 170	55 560	14.700	6 912	2.764	4.870	10.810	5.103	9 059	34.820	36 980	36.870	**22.199**
(m^3s^{-1})	Peak	246.20	284 70	50 31	30 85	9 55	31 10	69 16	98.40	47 78	294.70	193 30	166 20	**294.70**
Runoff (mm)		285	285	84	38	16	27	61	29	50	198	203	210	**1485**
Rainfall (mm)		349	292	79	76	46	139	78	129	121	256	175	252	**1992**

Monthly and yearly statistics for previous record (Oct 1962 to Dec 1989—incomplete or missing months total 9.8 years)

Mean	Avg.	34 460	23.510	28.810	17 440	11.170	10.480	8 787	13.370	18 400	30.550	34 100	41 950	**22.776**
flows	Low	6 245	5.174	5 789	2.626	1 295	1 618	0 822	1.819	5.966	10 770	14 530	7 501	**18.343**
(m^3s^{-1})	High	68.810	46 060	75.790	42 490	23 600	21.770	18 780	40 440	36 260	76 960	70 470	88 280	**26.520**
Peak flow (m^3s^{-1})		350 20	340 00	360.70	271.30	337 20	402 10	162 00	210 00	329 80	344 00	375 50	580 50	**580.50**
Runoff (mm)		196	121	164	96	63	58	50	76	101	174	188	238	**1525**
Rainfall (mm)		200	130	173	109	110	109	110	148	170	206	203	245	**1913**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 97% of previous mean rainfall 104%

064002 Dysynni at Pont-y-garth 1990

Measuring authority: NRA-WEL
First year: 1966
Grid reference: 23 (SH) 632 066
Level stn. (m OD): 2 30
Catchment area (sq km): 75.1
Max alt. (m OD): 892

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9 527	10 330	2 802	1.636	0 851	1 753	3.633	1.778	3 439	6 960	7 477	8.234	**4.838**
(m^3s^{-1})	Peak	32.37	36 62	9 25	4 89	1 94	14.46	19 59	27 88	23 76	47 94	25 15	28 13	**47.94**
Runoff (mm)		340	333	100	56	30	61	130	63	119	248	258	294	**2032**
Rainfall (mm)		344	261	91	85	52	149	89	154	163	218	198	268	**2072**

Monthly and yearly statistics for previous record (Jan 1966 to Dec 1989—incomplete or missing months total 1.8 years)

Mean	Avg.	6 048	4 744	5 121	3.508	2 423	2 304	2 636	3 293	4 127	5 811	6 761	7.045	**4.487**
flows	Low	3 371	1 548	0 986	0 457	0 298	0.427	0 278	0 289	1 926	0 556	3 011	2 770	**3.612**
(m^3s^{-1})	High	11 830	8 809	14 780	7.209	7 602	5 921	5 407	8 899	7 285	12 350	12.680	12.580	**5.434**
Peak flow (m^3s^{-1})		61.40	41 34	98 71	36 85	76.32	48 42	53 35	51.62	70.14	107 70	121.30	84 70	**121.30**
Runoff (mm)		216	154	183	121	86	80	94	117	142	207	233	251	**1885**
Rainfall (mm)		219	148	192	124	127	139	143	170	196	248	245	252	**2203**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 108% of previous mean rainfall 94%

065005 Erch at Pencaenewydd 1990

Measuring authority: NRA-WEL
First year: 1973
Grid reference: 23 (SH) 400 404
Level stn. (m OD): 56.10
Catchment area (sq km): 18.1
Max alt. (m OD): 564

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1 335	1 161	0.390	0 189	0 124	0.120	0 151	0.107	0.112	0 541	0 890	1 010	**0.507**
(m^3s^{-1})	Peak	6 49	4.38	1 19	0 28	0 40	0.49	2.73	0 71	1.47	8.75	5.86	7 58	**8.75**
Runoff (mm)		197	155	58	27	18	17	22	16	16	80	127	149	**884**
Rainfall (mm)		239	186	42	44	50	88	80	86	79	169	174	205	**1442**

Monthly and yearly statistics for previous record (Jan 1973 to Dec 1989)

Mean	Avg	0 990	0.804	0 778	0.483	0.328	0 215	0 184	0.311	0 409	0 777	1 006	1 081	**0.613**
flows	Low	0 629	0 365	0.311	0 177	0 120	0 089	0 081	0 061	0 103	0 236	0 264	0 600	**0.430**
(m^3s^{-1})	High	1 673	1.869	1.804	0 892	0 728	0 539	0 427	1.113	0.919	1.736	1.816	1.764	**0.739**
Peak flow (m^3s^{-1})		10 41	15 45	19.78	11 00	4.68	6 99	5.52	9 22	7 42	25 01	16.91	15 49	**25.01**
Runoff (mm)		146	108	115	69	49	31	27	46	59	115	144	160	**1069**
Rainfall (mm)		146	95	134	73	75	71	79	120	128	161	159	166	**1407**

Factors affecting flow regime: N
Station type: C

1990 runoff is 83% of previous mean rainfall 102%

066006 Elwy at Pont-y-gwyddel 1990

Measuring authority: NRA-WEL
First year: 1973
Grid reference: 23 (SH) 952 718
Level stn (m OD): 87 90
Catchment area (sq km): 194.0
Max alt. (m OD): 518

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13 060	15.070	3.068	1 528	0 567	0.397	0 488	0 263	0 404	3 240	5 793	9 216	**4.363**
(m^3s^{-1})	Peak	100.40	58 00	13 67	3.77	1 08	0 92	2 71	1 95	1 82	9 78	24 80	47 38	**100 40**
Runoff (mm)		180	188	42	20	8	5	7	4	5	45	77	127	**709**
Rainfall (mm)		238	223	38	55	30	85	44	55	93	150	97	180	**1288**

Monthly and yearly statistics for previous record (Dec 1973 to Dec 1989)

Mean	Avg.	7.774	5 900	5 497	3.159	1.731	1 273	0 699	1 270	2 467	5 266	7 780	7.804	**4.171**
flows	Low	3 115	2 650	1 539	0.823	0 479	0 359	0 278	0 242	0 249	1 360	2 263	4 644	**2.908**
(m^3s^{-1})	High	11 660	12.050	11.950	6 939	5 918	3 300	1 402	4 351	7 450	11.530	11 850	14 450	**5.094**
Peak flow (m^3s^{-1})		82 42	50 82	76 59	50 76	21 66	18 00	27.05	38 13	58 57	143 00	101 60	75 42	**143.00**
Runoff (mm)		107	74	76	42	24	17	10	18	33	73	97	108	**679**
Rainfall (mm)		126	84	108	61	73	73	67	91	119	132	142	141	**1217**

Factors affecting flow regime: SRP
Station type: VA

1990 runoff is 105% of previous mean
rainfall 106%

067008 Alyn at Pont-y-capel 1990

Measuring authority: NRA-WEL
First year: 1965
Grid reference: 33 (SJ) 336 541
Level stn. (m OD): 37 30
Catchment area (sq km): 227.1
Max alt. (m OD): 562

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	4 616	6 463	1 960	1 065	0 676	0 599	0 470	0 399	0 474	0 671	2.953	3 663	**1 972**
(m^3s^{-1})	Peak	24.46	18 88	6 24	2 44	1.11	1 30	0 88	1 29	1 89	3 63	11 54	17 51	**24.46**
Runoff (mm)		54	69	23	12	8	7	6	5	5	8	34	43	**274**
Rainfall (mm)		131	119	19	41	26	72	31	44	91	100	96	108	**878**

Monthly and yearly statistics for previous record (Jun 1965 to Dec 1989)

Mean	Avg.	4 291	3 799	3 261	2 645	1 772	1.177	0 872	0 898	0 975	1 971	3 000	4 264	**2.405**
flows	Low	1 328	1.553	1 448	1 023	0 712	0 438	0 331	0 287	0 474	0 452	0 614	1 246	**1.268**
(m^3s^{-1})	High	7 219	9 085	8 027	6 474	5.657	2 873	2 098	2 456	3 906	6 896	6 168	9 480	**3.027**
Peak flow (m^3s^{-1})		27 53	28.52	26 11	25.28	26 86	18 34	23 23	20 81	59.11	26.46	28 21	35 92	**59.11**
Runoff (mm)		51	41	38	30	21	13	10	11	11	23	34	50	**334**
Rainfall (mm)		85	64	77	62	71	65	60	73	80	86	103	97	**923**

Factors affecting flow regime: S EI
Station type: CC

1990 runoff is 82% of previous mean
rainfall 95%

069002 Irwell at Adelphi Weir 1990

Measuring authority: NRA-NW
First year: 1949
Grid reference: 33 (SJ) 824 987
Level stn. (m OD): 24.10
Catchment area (sq km): 559.4
Max alt. (m OD): 473

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	36 540	29 790	12 890	10 240	7 714	10.710	10 150	8 772	8 620	22 190	17 930	21 490	**16.360**
(m^3s^{-1})	Peak	184 00	150.60	38.33	76 47	24 13	32.23	48 40	48 70	42 68	104 70	67 05	202 70	**202.70**
Runoff (mm)		175	129	62	47	37	50	49	42	40	106	83	103	**922**
Rainfall (mm)		208	139	43	70	42	122	58	96	85	192	80	129	**1264**

Monthly and yearly statistics for previous record (Oct 1949 to Dec 1989—incomplete or missing months total 2.0 years)

Mean	Avg.	25 060	21.630	17 810	14 310	11.700	10 230	11 120	15 680	16 390	20 490	24 800	29 130	**18.190**
flows	Low	3 705	4 787	7 803	5 408	4.348	2 750	4 031	3 676	2 991	4 990	7.534	7 469	**10.469**
(m^3s^{-1})	High	40 260	67 230	48 030	27 070	21 530	18 900	26 150	56.000	43 480	52 510	51.100	84 660	**30.469**
Peak flow (m^3s^{-1})		430.40	400 30	295 60	184 20	141 60	238 00	385 60	395 70	390 80	485 10	334 90	419.50	**485.10**
Runoff (mm)		120	94	85	66	56	47	53	75	76	98	115	139	**1026**
Rainfall (mm)		118	83	95	76	80	87	98	124	117	126	131	138	**1273**

Factors affecting flow regime: S PGEI
Station type: B

1990 runoff is 90% of previous mean
rainfall 99%

069007 Mersey at Ashton Weir 1990

Measuring authority: NRA-NW
First year: 1981
Grid reference: 33 (SJ) 772 936
Level stn (m OD): 14 90
Catchment area (sq km): 660.0
Max alt (m OD): 636

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	18.180	17 000	8.212	5 202	3 727	4 921	3 917	4 233	4 186	9 997	13 840	21 210	**9.518**
(m^3s^{-1})	Peak	118.00	66.67	20 97	16 74	9 89	16 95	9 59	36 80	13 19	57 17	63 72	237 70	**237 70**
Runoff (mm)		74	62	33	20	15	19	16	17	16	41	54	86	**455**
Rainfall (mm)		150	113	44	64	34	108	42	85	78	161	87	134	**1100**

Monthly and yearly statistics for previous record (Jan 1981 to Dec 1989—incomplete or missing months total 0.1 years)

Mean	Avg.	20 420	12 290	16 950	11 400	6 556	7.043	4 803	6 767	7.574	11.860	14 950	17 770	**11.540**
flows	Low	8.297	7.399	5.544	4.698	3 585	3 847	2 447	2 760	2 574	5 978	7 300	8 686	**8 438**
(m^3s^{-1})	High	29 220	23 100	36 210	17 190	11 420	18.090	7 866	12.560	11 110	25.500	25 190	36 810	**15.876**
Peak flow (m^3s^{-1})		188 80	125.00	176.70	113 00	56 25	157.50	49 21	216.70	87 70	202 50	303.70	502 90	**502.90**
Runoff (mm)		83	46	69	45	27	28	19	27	30	48	59	72	**552**
Rainfall (mm)		121	59	122	76	67	85	67	102	93	124	120	120	**1156**

Factors affecting flow regime: S PGEI
Station type: CB

1990 runoff is 82% of previous mean
rainfall 95%

069015 Etherow at Compstall — 1990

Measuring authority: NRA-NW
First year: 1977
Grid reference: 33 (SJ) 962 908
Level stn (m OD): 73.50
Catchment area (sq km): 156.0
Max alt (m OD): 628

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.267	4.615	2.606	1.309	0.897	1.064	0.839	1.012	0.911	2.207	3.438	6.574	**2.549**
(m^3s^{-1})	Peak	24.57	15.89	8.41	5.47	2.34	7.34	2.47	13.61	4.07	13.93	21.39	42.63	**42.63**
Runoff (mm)		90	72	45	22	15	18	14	17	15	38	57	112	**515**
Rainfall (mm)		168	132	55	85	35	120	50	94	82	182	106	162	**1271**

Monthly and yearly statistics for previous record (Jan 1977 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg	5.732	4.324	5.168	3.374	1.962	1.680	1.297	1.805	1.975	3.191	4.558	5.045	**3.340**
flows	Low	2.141	2.141	1.365	1.070	0.539	0.835	0.718	0.691	0.637	1.264	1.846	2.413	**2.440**
(m^3s^{-1})	High	8.964	8.539	10.080	6.325	4.870	4.758	2.265	3.572	4.192	9.424	7.471	9.286	**4.189**
Peak flow (m^3s^{-1})		42.63	44.46	46.03	32.66	18.79	28.64	15.47	35.56	43.08	42.12	40.15	62.95	**62.95**
Runoff (mm)		98	68	89	56	34	28	22	31	33	55	76	87	**678**
Rainfall (mm)		147	92	148	86	76	105	76	123	113	140	142	152	**1400**

Factors affecting flow regime: S PGEI
Station type: C

1990 runoff is 76% of previous mean rainfall 91%

071001 Ribble at Samlesbury — 1990

Measuring authority: NRA-NW
First year: 1960
Grid reference: 34 (SD) 589 304
Level stn (m OD): 6.00
Catchment area (sq km): 1145.0
Max alt (m OD): 680

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	81.110	71.610	23.510	12.170	10.020	10.070	17.460	8.679	14.710	53.880	36.340	46.740	**32.020**
(m^3s^{-1})	Peak	398.50	385.50	83.33	45.32	27.05	43.34	172.20	75.48	141.40	320.30	284.20	380.10	**398.50**
Runoff (mm)		190	151	55	28	23	23	41	20	33	126	82	109	**882**
Rainfall (mm)		246	194	59	60	44	106	63	94	90	199	90	149	**1394**

Monthly and yearly statistics for previous record (May 1960 to Dec 1989)

Mean	Avg	50.900	36.880	35.160	26.080	18.010	14.280	16.370	24.360	29.800	41.780	51.720	55.800	**33.437**
flows	Low	10.610	9.565	11.790	5.601	4.048	5.031	2.638	2.958	4.263	5.716	20.770	15.190	**22.045**
(m^3s^{-1})	High	82.510	80.890	104.700	54.820	46.460	33.520	40.500	68.920	65.820	118.400	88.610	120.200	**45.022**
Peak flow (m^3s^{-1})		754.60	513.10	643.30	466.60	319.10	494.80	399.80	520.80	619.30	810.00	613.20	891.30	**891.30**
Runoff (mm)		119	79	82	59	42	32	38	57	67	98	117	131	**922**
Rainfall (mm)*		133	85	109	80	82	90	92	119	131	141	141	149	**1352**

*(1961-1989)

Factors affecting flow regime: S E
Station type: MIS

1990 runoff is 96% of previous mean rainfall 103%

071004 Calder at Whalley Weir — 1990

Measuring authority: NRA-NW
First year: 1963
Grid reference: 34 (SD) 729 360
Level stn. (m OD): 39.90
Catchment area (sq km): 316.0
Max alt (m OD): 558

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	18.270	15.280	6.525	3.986	2.699	3.886	4.044	3.227	3.659	12.730	9.777	12.420	**8.095**
(m^3s^{-1})	Peak	112.80	74.26	25.51	14.56	7.60	30.84	20.17	46.86	33.56	86.82	43.63	94.64	**112.80**
Runoff (mm)		155	117	55	33	23	32	34	27	30	108	80	105	**808**
Rainfall (mm)		221	157	52	60	37	117	52	82	74	183	83	128	**1246**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 2.6 years)

Mean	Avg	13.070	9.472	9.308	6.651	5.108	4.326	3.916	5.983	7.341	10.930	12.700	13.530	**8.529**
flows	Low	5.766	3.320	3.989	2.272	2.053	1.888	1.773	1.564	1.921	2.397	5.625	4.886	**6.225**
(m^3s^{-1})	High	20.590	17.170	25.320	13.010	9.916	7.609	9.059	16.280	18.620	23.910	21.990	25.610	**11.485**
Peak flow (m^3s^{-1})		183.20	146.10	185.20	108.40	91.66	135.50	230.60	171.60	206.00	229.50	148.60	194.30	**230.60**
Runoff (mm)		111	73	79	55	43	35	33	51	60	93	104	115	**852**
Rainfall (mm)		122	77	105	71	77	86	82	110	117	131	129	130	**1237**

Factors affecting flow regime: EI
Station type: FV

1990 runoff is 95% of previous mean rainfall 101%

072002 Wyre at St Michaels — 1990

Measuring authority: NRA-NW
First year: 1963
Grid reference: 34 (SD) 463 411
Level stn. (m OD): 4.40
Catchment area (sq km): 275.0
Max alt. (m OD): 560

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.390	13.710	3.429	1.527	0.958	1.155	2.355	0.695	2.265	11.210	8.189	8.098	**5.641**
(m^3s^{-1})	Peak	62.11	81.82	16.04	7.48	2.85	8.71	55.06	5.87	32.03	86.90	56.75	75.32	**86.90**
Runoff (mm)		140	121	33	14	9	11	23	7	21	109	77	79	**647**
Rainfall (mm)		202	155	42	51	42	95	66	78	93	208	83	115	**1230**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 0.2 years)

Mean	Avg	9.968	7.000	7.152	4.821	3.218	2.823	3.027	4.722	6.482	9.410	10.230	11.190	**6.674**
flows	Low	3.983	1.746	2.270	0.774	0.732	0.444	0.431	0.248	0.672	0.617	4.859	2.581	**3.186**
(m^3s^{-1})	High	17.820	16.030	25.920	12.090	10.450	7.096	7.477	16.240	13.290	25.500	18.510	26.530	**10.329**
Peak flow (m^3s^{-1})		156.50	145.60	168.90	123.00	128.20	146.60	148.10	162.10	176.50	180.40	163.10	190.50	**190.50**
Runoff (mm)		97	62	70	45	31	27	29	46	61	92	96	109	**766**
Rainfall (mm)		119	72	101	70	78	89	92	115	128	141	135	132	**1272**

Factors affecting flow regime: S PG
Station type: FV

1990 runoff is 84% of previous mean rainfall 97%

073005 Kent at Sedgwick 1990

Measuring authority: NRA-NW
First year: 1968
Grid reference: 34 (SD) 509 874
Level stn (m OD): 18 90
Catchment area (sq km): 209 0
Max alt. (m OD): 817

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	20 680	27.400	8 420	4 259	3 614	2 496	6 105	2 247	2.898	12 790	9.361	14 090	**9.435**
(m^3s^{-1})	Peak	112 90	167 80	27 46	14 47	21 39	9 85	54 18	7 45	15 34	72 31	66 65	130 20	**167.80**
Runoff (mm)		265	317	108	53	46	31	78	29	36	164	116	181	**1424**
Rainfall (mm)		342	382	87	80	81	130	101	83	80	250	101	256	**1973**

Monthly and yearly statistics for previous record (Nov 1968 to Dec 1989)

Mean	Avg	12 810	9 846	9 998	6 502	4 171	3 716	3 822	5 775	8 101	10 760	13 580	13 200	**8 519**
flows	Low	5 998	3 094	3 348	2 038	1 222	0 872	0 658	0.740	1 753	1 396	5.484	5.466	**5.995**
(m^3s^{-1})	High	20.950	16.800	23 030	12 620	11 580	13 010	10 570	18 810	15 680	18 110	21 490	23 210	**10.316**
Peak flow (m^3s^{-1})		230 90	118 70	194 60	111.10	53 44	72 86	95 90	94 26	120 70	131 70	177 80	276 40	**276 40**
Runoff (mm)		164	115	128	81	53	46	49	74	100	138	168	169	**1286**
Rainfall (mm)		191	112	160	89	87	99	111	135	171	185	205	194	**1739**

Factors affecting flow regime: N I
Station type: CBVA

1990 runoff is 111% of previous mean
rainfall 113%

074005 Ehen at Braystones 1990

Measuring authority: NRA-NW
First year: 1974
Grid reference: 35 (NY) 009 061
Level stn (m OD): 10.10
Catchment area (sq km): 125.5
Max alt (m OD): 899

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	7 913	9.982	2 951	2 003	1 670	3 258	5 602	2 688	4 367	11 590	4 224	7 305	**5.278**
(m^3s^{-1})	Peak	32 76	34 58	8 14	5 92	3 03	12 44	56 79	5 38	14 27	72 33	16 68	41 51	**72.33**
Runoff (mm)		169	192	63	41	36	67	120	57	90	247	87	156	**1328**
Rainfall (mm)		256	242	55	81	65	140	106	93	123	267	86	226	**1740**

Monthly and yearly statistics for previous record (Jan 1974 to Dec 1989)

Mean	Avg	7.853	5 805	5 928	3 460	2 040	1 858	2 126	3 979	5 310	7 862	7 867	7 825	**5.160**
flows	Low	2.220	1 856	2 225	0.993	0.771	0 779	0 789	0.661	1 694	3 640	3 121	2 448	**3.983**
(m^3s^{-1})	High	16 030	15 890	10 300	7 046	6 877	4.371	5 444	12 260	12 840	14 080	12 470	13 380	**6.328**
Peak flow (m^3s^{-1})		97 85	79 36	69 47	81 07	46 97	38 25	56 92	74 32	76 40	115 90	64 49	91 47	**115.90**
Runoff (mm)		168	113	127	71	44	38	45	85	110	168	162	167	**1298**
Rainfall (mm)		201	114	182	87	79	95	127	157	187	225	196	204	**1854**

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 102% of previous mean
rainfall 94%

075002 Derwent at Camerton 1990

Measuring authority: NRA-NW
First year: 1960
Grid reference: 35 (NY) 038 305
Level stn (m OD): 16 70
Catchment area (sq km): 663 0
Max alt (m OD): 950

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	55 050	84 850	24 870	12 780	6 944	9 129	11.470	6.043	13 550	44 330	26 200	42 770	**27.839**
(m^3s^{-1})	Peak	162.40	151 10	74 86	23 58	10 25	20 71	33 78	13 44	28 06	158 10	51 89	156 60	**162.40**
Runoff (mm)		222	310	100	50	28	36	46	24	53	179	102	173	**1324**
Rainfall (mm)		339	375	75	102	60	134	95	103	133	285	105	287	**2093**

Monthly and yearly statistics for previous record (Sep 1960 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg	38.290	28 210	26 320	19 970	12 640	10 010	11 480	18 500	25 490	35 580	40 400	40 730	**25.634**
flows	Low	9 587	4 837	7 466	4 359	2 753	2 041	2 503	2 384	2 885	2 755	14 570	14.740	**14 823**
(m^3s^{-1})	High	84 550	56 570	66 470	38 940	36 280	34 800	23 140	55 940	62 980	107 800	76 340	75 840	**34.235**
Peak flow (m^3s^{-1})		219 20	165 70	215 50	145 50	102 90	135 80	114 50	216 20	189 20	264 70	211 30	199 00	**264.70**
Runoff (mm)		155	104	106	78	51	39	46	75	100	144	158	165	**1220**
Rainfall (mm)*		181	106	149	95	100	107	117	150	179	201	191	189	**1765**

*(1961-1989)

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 109% of previous mean
rainfall 119%

076005 Eden at Temple Sowerby 1990

Measuring authority: NRA-NW
First year: 1964
Grid reference: 35 (NY) 605 283
Level stn. (m OD): 92 40
Catchment area (sq km): 616 4
Max alt (m OD): 950

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	42 280	62 620	11.560	4.405	3 612	2 649	4 400	1 653	2 212	13 230	11 010	30 890	**15 611**
(m^3s^{-1})	Peak	263 00	307 20	43 08	11 44	24.84	11 83	68 15	7 34	12 73	117 90	85 64	219.50	**307.20**
Runoff (mm)		184	246	50	19	16	11	19	7	9	57	46	134	**799**
Rainfall (mm)		247	284	45	44	57	75	58	51	59	148	64	191	**1323**

Monthly and yearly statistics for previous record (Nov 1964 to Dec 1989)

Mean	Avg	23 240	18 060	16 960	10 800	7 354	5 395	5 550	8 170	11 560	16 890	21 590	25 250	**14.227**
flows	Low	10 870	5 577	6 338	2 923	2 196	1 879	1 176	1 613	1 593	1 975	7 764	9 403	**8.669**
(m^3s^{-1})	High	41 800	32 960	43 560	19 500	17 000	13 780	16 690	22 070	30 440	55 960	38.740	49 530	**18.912**
Peak flow (m^3s^{-1})		283.30	287 30	346 30	165 80	150 40	139 40	230 50	204 00	280 20	271 00	279 30	323 20	**346.30**
Runoff (mm)		101	72	74	45	32	23	24	36	49	73	91	110	**728**
Rainfall (mm)		121	79	100	61	71	70	79	96	108	116	125	130	**1156**

Factors affecting flow regime:
Station type: VA

1990 runoff is 110% of previous mean
rainfall 114%

077003 Liddel Water at Rowanburnfoot 1990

Measuring authority: SRPB
First year: 1973
Grid reference: 35 (NY) 415 759
Level stn. (m OD): 27.10
Catchment area (sq km): 319.0
Max alt. (m OD): 608

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	24.990	32.020	12.540	3.190	3.547	2.862	4.523	1.523	2.824	16.030	6.163	22.900	**11.001**
(m^3s^{-1})	Peak	176.40	349.10	131.40	11.02	71.39	42.40	69.04	11.25	53.61	306.00	73.87	292.60	**349.10**
Runoff (mm)		210	243	105	26	30	23	38	13	23	135	50	192	**1088**
Rainfall (mm)		260	302	89	59	75	112	74	76	74	193	59	235	**1608**

Monthly and yearly statistics for previous record (Oct 1973 to Dec 1989)

Mean	Avg	16.130	11.790	13.300	6.496	4.966	4.309	5.212	6.614	9.299	12.200	14.790	15.970	**10.091**
flows	Low	8.344	5.633	5.710	1.538	1.118	1.083	0.879	0.869	1.757	4.057	3.421	4.819	**7.515**
(m^3s^{-1})	High	30.750	18.000	23.150	14.230	16.720	12.940	22.800	23.360	24.390	19.120	26.200	26.460	**13.058**
Peak flow (m^3s^{-1})		315.00	229.30	345.30	171.00	241.00	131.00	309.40	178.80	354.90	334.30	281.00	393.20	**393.20**
Runoff (mm)		135	90	112	53	42	35	44	56	76	102	120	134	**998**
Rainfall (mm)		145	87	133	68	84	85	107	123	128	142	140	154	**1398**

Factors affecting flow regime:
Station type: VA

1990 runoff is 109% of previous mean rainfall 115%

078003 Annan at Brydekirk 1990

Measuring authority: SRPB
First year: 1967
Grid reference: 35 (NY) 191 704
Level stn. (m OD): 10.00
Catchment area (sq km): 925.0
Max alt. (m OD): 821

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	82.940	105.700	46.030	11.120	7.428	16.470	18.240	6.436	9.517	47.840	19.960	56.090	**35.306**
(m^3s^{-1})	Peak	282.00	291.70	145.70	20.34	33.55	93.31	87.68	18.17	34.69	234.20	65.37	272.10	**291.70**
Runoff (mm)		240	277	133	31	22	46	53	19	27	139	56	162	**1204**
Rainfall (mm)		282	289	93	49	73	129	80	87	68	203	52	204	**1609**

Monthly and yearly statistics for previous record (Oct 1967 to Dec 1989)

Mean	Avg	44.930	34.400	32.350	20.320	15.220	11.460	11.030	18.400	25.720	37.150	41.780	43.420	**28.003**
flows	Low	17.820	12.820	8.402	6.124	3.519	2.937	1.944	2.007	3.362	3.592	11.490	19.530	**16.402**
(m^3s^{-1})	High	83.440	55.800	63.910	40.600	53.160	32.150	34.940	76.390	76.320	86.820	77.930	87.020	**36.424**
Peak flow (m^3s^{-1})		405.40	305.00	293.30	213.30	172.50	171.30	253.10	378.90	446.60	499.10	325.00	355.40	**499.10**
Runoff (mm)		130	91	94	57	44	32	32	53	72	108	117	126	**956**
Rainfall (mm)		140	91	120	67	86	81	95	112	134	146	135	140	**1347**

Factors affecting flow regime: N
Station type: VA

1990 runoff is 126% of previous mean rainfall 119%

078004 Kinnel Water at Redhall 1990

Measuring authority: SRPB
First year: 1963
Grid reference: 35 (NY) 077 868
Level stn. (m OD): 53.70
Catchment area (sq km): 76.1
Max alt. (m OD): 697

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	9.214	9.298	4.189	0.957	0.622	1.818	1.487	0.529	1.052	4.690	1.563	6.051	**3.431**
(m^3s^{-1})	Peak	80.89	49.87	25.24	5.59	12.09	32.87	14.81	3.63	11.63	50.50	15.17	89.34	**89.34**
Runoff (mm)		324	296	147	33	22	62	52	19	36	165	53	213	**1422**
Rainfall (mm)		312	310	110	48	78	134	93	93	70	212	56	239	**1753**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989—incomplete or missing months total 1.0 years)

Mean	Avg	4.081	2.987	2.862	1.647	1.536	1.059	1.028	1.733	2.760	3.619	3.939	4.060	**2.609**
flows	Low	1.296	0.590	0.552	0.251	0.122	0.112	0.048	0.049	0.099	0.207	0.740	1.081	**1.507**
(m^3s^{-1})	High	8.456	5.362	6.263	4.161	5.496	3.282	3.435	7.513	6.689	7.288	7.535	8.490	**3.517**
Peak flow (m^3s^{-1})		79.34	90.99	59.19	66.70	51.79	36.09	60.14	65.25	91.37	110.90	86.69	103.60	**110.90**
Runoff (mm)		144	96	101	56	54	36	36	61	94	127	134	143	**1082**
Rainfall (mm)		148	97	127	76	97	88	96	120	149	156	148	154	**1456**

Factors affecting flow regime
Station type: VA

1990 runoff is 131% of previous mean rainfall 120%

080001 Urr at Dalbeattie 1990

Measuring authority: SRPB
First year: 1963
Grid reference: 25 (NX) 822 610
Level stn. (m OD): 4.00
Catchment area (sq km): 199.0
Max alt. (m OD): 432

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	14.440	19.340	7.251	1.568	0.893	2.282	1.677	0.643	0.930	9.503	5.100	10.520	**6.111**
(m^3s^{-1})	Peak	63.09	54.75	23.04	4.76	3.58	22.67	25.43	4.10	3.94	62.53	20.25	76.03	**76.03**
Runoff (mm)		194	235	98	20	12	30	23	9	12	128	66	142	**968**
Rainfall (mm)		253	292	81	61	80	94	74	81	55	202	76	199	**1548**

Monthly and yearly statistics for previous record (Nov 1963 to Dec 1989)

Mean	Avg	9.632	7.622	6.430	3.685	3.032	2.006	1.468	3.032	5.360	8.260	9.380	9.774	**5.801**
flows	Low	3.534	1.419	2.094	0.753	0.308	0.246	0.137	0.149	0.319	0.522	1.711	3.369	**3.109**
(m^3s^{-1})	High	19.080	13.750	11.990	7.485	10.880	6.833	5.081	13.310	17.160	19.400	19.420	18.590	**8.358**
Peak flow (m^3s^{-1})		133.70	100.10	95.03	61.69	65.95	59.18	68.42	104.60	114.10	162.20	129.70	164.30	**164.30**
Runoff (mm)		130	94	87	48	41	26	20	41	70	111	122	132	**920**
Rainfall (mm)		135	91	114	68	82	78	80	105	134	147	141	139	**1314**

Factors affecting flow regime
Station type: VA

1990 runoff is 105% of previous mean rainfall 118%

081002 Cree at Newton Stewart 1990

Measuring authority: SRPB
First year: 1963

Grid reference: 25 (NX) 412 653
Level stn. (m OD) 4.80

Catchment area (sq km): 368.0
Max alt. (m OD): 843

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	31.980	42.490	16.440	9.974	3.222	12.830	7.899	10.260	14.140	32.160	17.210	22.070	**18.245**
(m^3s^{-1}):	Peak	206.30	206.70	71.31	46.43	26.81	91.57	76.34	101.80	105.40	215.40	99.24	197.70	**215.40**
Runoff (mm)		233	279	120	70	23	90	57	75	100	234	121	161	**1564**
Rainfall (mm)		308	368	122	129	92	152	86	172	138	275	147	221	**2210**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989)

Mean	Avg.	23.810	16.740	16.270	9.653	7.968	6.398	7.744	10.850	16.720	21.700	23.060	23.360	**15.361**
flows	Low	9.633	2.569	4.039	1.319	0.426	1.176	0.969	0.684	1.063	6.495	7.292	5.775	**9.965**
(m^3s^{-1})	High	45.820	29.810	28.180	20.820	22.960	15.620	19.710	36.030	43.310	36.720	43.910	48.050	**18.979**
Peak flow (m^3s^{-1})		272.50	253.10	217.10	192.30	119.40	195.10	223.10	230.90	312.70	318.00	199.10	303.90	**318.00**
Runoff (mm)		173	111	118	68	58	45	56	79	118	158	162	170	**1317**
Rainfall (mm)		194	119	156	92	98	99	111	137	172	197	199	190	**1764**

Factors affecting flow regime:
Station type: VA

1990 runoff is 119% of previous mean
rainfall 125%

081003 Luce at Airyhemming 1990

Measuring authority: SRPB
First year: 1967

Grid reference: 25 (NX) 180 599
Level stn. (m OD) 19.00

Catchment area (sq km): 171.0
Max alt. (m OD): 438

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	11.020	14.810	4.557	3.737	0.748	4.962	2.953	2.916	4.943	13.310	7.435	7.003	**6.479**
(m^3s^{-1}):	Peak	76.19	96.32	30.85	26.99	3.87	88.23	53.64	36.74	35.69	106.50	109.90	69.97	**109.90**
Runoff (mm)		173	209	71	57	12	75	46	46	75	208	113	110	**1195**
Rainfall (mm)		200	224	73	106	63	148	78	145	113	247	113	146	**1658**

Monthly and yearly statistics for previous record (Jan 1967 to Dec 1989)

Mean	Avg	10.220	6.899	6.469	3.597	2.500	1.870	2.253	3.721	6.184	8.880	9.678	9.037	**5.942**
flows	Low	4.540	0.789	1.359	0.454	0.260	0.225	0.191	0.277	0.365	1.689	3.857	2.445	**3.691**
(m^3s^{-1})	High	15.600	12.110	12.310	8.289	7.597	5.360	6.445	14.290	17.660	16.750	15.940	17.090	**7.787**
Peak flow (m^3s^{-1})		177.10	146.10	197.30	197.60	63.64	190.30	131.50	283.60	192.40	231.80	168.40	204.00	**283.60**
Runoff (mm)		160	99	101	55	39	28	35	58	94	139	147	142	**1097**
Rainfall (mm)		166	98	123	77	78	83	97	118	147	164	162	149	**1462**

Factors affecting flow regime: S P
Station type: VA

1990 runoff is 109% of previous mean
rainfall 113%

082002 Doon at Auchendrane 1990

Measuring authority: CRPB
First year: 1974

Grid reference: 26 (NS) 338 160
Level stn. (m OD) 22.20

Catchment area (sq km): 323.8
Max alt. (m OD): 844

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	13.740	18.360	13.320	6.615	3.117	3.730	3.373	4.968	6.710	13.720	6.325	10.950	**8.697**
(m^3s^{-1}):	Peak	40.50	57.58	48.49	23.04	4.38	14.37	10.87	16.07	32.71	58.60	18.89	65.71	**65.71**
Runoff (mm)		114	137	110	53	26	30	28	41	54	114	51	91	**847**
Rainfall (mm)		305	370	158	118	66	127	72	153	123	264	98	214	**2068**

Monthly and yearly statistics for previous record (Jul 1974 to Dec 1989)

Mean	Avg.	10.770	7.684	8.273	4.767	4.131	3.763	4.130	5.388	7.830	9.918	10.430	10.660	**7.316**
flows	Low	5.203	3.685	4.270	3.157	2.390	2.265	2.397	2.557	4.101	4.732	4.785	6.247	**5.559**
(m^3s^{-1})	High	15.120	13.110	11.360	6.740	8.006	4.981	6.945	10.930	17.680	14.610	17.290	20.680	**8.517**
Peak flow (m^3s^{-1})		85.15	63.08	69.51	33.84	42.45	19.62	61.38	46.34	103.20	121.50	72.14	84.49	**121.50**
Runoff (mm)		89	58	68	38	34	30	34	45	63	82	84	88	**713**
Rainfall (mm)*		197	98	134	57	74	75	90	111	200	193	197	179	**1605**

*(1974-1985)

Factors affecting flow regime: S
Station type: VA

1990 runoff is 119% of previous mean
rainfall 129%

083003 Ayr at Catrine 1990

Measuring authority: CRPB
First year: 1970

Grid reference: 26 (NS) 525 259
Level stn. (m OD): 89.90

Catchment area (sq km): 166.3
Max alt. (m OD): 548

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	11.770	13.830	10.440	4.548	2.438	2.237	2.006	5.817	7.992	13.410	6.147	12.200	**7.714**
(m^3s^{-1}):	Peak	75.08	86.88	102.90	27.59	50.51	22.72	21.04	70.66	75.39	82.73	32.59	93.40	**102.90**
Runoff (mm)		190	201	168	71	39	35	32	94	125	216	96	196	**1463**
Rainfall (mm)		256	245	171	90	68	101	58	148	109	207	56	177	**1686**

Monthly and yearly statistics for previous record (Sep 1970 to Dec 1989)

Mean	Avg.	8.663	5.499	5.740	2.844	1.983	1.924	2.043	3.186	5.193	6.576	7.931	7.447	**4.920**
flows	Low	3.182	1.534	1.480	0.733	0.593	0.639	0.417	0.410	0.597	0.631	2.147	3.312	**3.613**
(m^3s^{-1})	High	14.120	11.280	10.780	7.056	5.714	4.179	7.720	9.970	14.680	10.900	13.630	14.490	**5.928**
Peak flow (m^3s^{-1})		178.50	96.54	92.30	67.02	75.55	70.32	73.43	72.00	157.40	162.60	105.60	119.20	**178.50**
Runoff (mm)		140	81	92	44	32	30	33	51	81	106	124	120	**934**
Rainfall (mm)		142	83	113	64	69	80	88	101	128	145	148	135	**1296**

Factors affecting flow regime: H
Station type: VA

1990 runoff is 157% of previous mean
rainfall 130%

084012 White Cart Water at Hawkhead 1990

Measuring authority: CRPB
First year: 1963

Grid reference: 26 (NS) 499 629
Level stn. (m OD): 4.10

Catchment area (sq km): 227.2
Max alt. (m OD): 376

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	21.020	20.180	18.430	5.964	2.085	2.513	3.497	1.936	3.219	14.920	5.232	11.590	**9.180**
(m^3s^{-1})	Peak	74.39	103.80	117.60	28.45	16.52	47.51	53.63	19.04	46.32	152.40	39.92	72.04	**152.40**
Runoff (mm)		248	215	217	68	25	29	41	23	37	176	60	137	**1274**
Rainfall (mm)		286	249	216	99	64	111	66	108	88	235	58	175	**1755**

Monthly and yearly statistics for previous record (Oct 1963 to Dec 1989)

Mean	Avg	10.670	7.548	7.248	3.972	3.286	2.421	2.283	3.910	7.120	10.440	11.000	10.280	**6.681**
flows	Low	4.692	2.341	1.676	1.112	0.824	0.827	0.562	0.629	1.141	1.212	3.014	3.211	**4.419**
(m^3s^{-1})	High	21.190	13.460	14.600	8.523	9.188	6.542	7.863	12.640	21.990	46.570	19.470	19.610	**10.946**
Peak flow (m^3s^{-1})		187.40	139.20	117.00	82.46	115.10	65.13	86.31	111.30	132.90	134.40	134.00	187.10	**187.40**
Runoff (mm)		126	81	85	45	39	28	27	46	81	123	126	121	**928**
Rainfall (mm)		126	80	109	62	79	72	78	102	136	142	144	130	**1260**

Factors affecting flow regime: S
Station type: VA

1990 runoff is 137% of previous mean
rainfall 139%

084016 Luggie Water at Condorrat 1990

Measuring authority: CRPB
First year: 1966

Grid reference: 26 (NS) 739 725
Level stn. (m OD): 68.00

Catchment area (sq km): 33.9
Max alt. (m OD): 107

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	1.936	2.378	1.846	0.597	0.237	0.326	0.395	0.309	0.324	1.568	0.608	1.341	**0.983**
(m^3s^{-1})	Peak	6.00	13.59	13.63	2.65	0.80	7.00	4.40	2.62	1.60	34.20	4.03	7.75	**34.20**
Runoff (mm)		153	170	146	46	19	25	31	24	25	124	46	106	**915**
Rainfall (mm)		217	192	151	69	45	104	52	109	66	181	46	144	**1376**

Monthly and yearly statistics for previous record (Oct 1966 to Dec 1989—incomplete or missing months total 0.5 years)

Mean	Avg	1.472	1.027	0.992	0.571	0.466	0.306	0.305	0.505	0.805	1.077	1.344	1.355	**0.852**
flows	Low	0.680	0.415	0.370	0.287	0.166	0.138	0.147	0.123	0.125	0.129	0.367	0.592	**0.539**
(m^3s^{-1})	High	3.104	1.944	1.636	1.030	1.199	0.692	1.751	1.606	3.386	2.121	2.362	2.669	**1.121**
Peak flow (m^3s^{-1})		30.25	19.34	28.11	10.80	14.54	6.19	27.14	22.06	44.46	32.53	30.68	36.04	**44.46**
Runoff (mm)		116	74	78	44	37	23	24	40	62	85	103	107	**793**
Rainfall (mm)		107	71	92	51	69	65	74	92	113	118	116	107	**1075**

Factors affecting flow regime:
Station type: VA

1990 runoff is 115% of previous mean
rainfall 128%

085001 Leven at Linnbrane 1990

Measuring authority: CRPB
First year: 1963

Grid reference: 26 (NS) 394 803
Level stn. (m OD): 4.30

Catchment area (sq km): 784.3
Max alt. (m OD): 1130

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	76.020	134.600	144.400	52.310	10.210	10.410	22.190	10.270	31.630	72.070	40.850	32.410	**52.656**
(m^3s^{-1})	Peak	116.40	163.60	215.70	81.85	14.66	17.10	51.20	19.45	51.33	92.70	61.45	96.68	**215.70**
Runoff (mm)		260	415	493	173	35	34	76	35	105	246	135	111	**2117**
Rainfall (mm)		432	446	425	144	51	145	93	143	159	308	96	268	**2710**

Monthly and yearly statistics for previous record (Jul 1963 to Dec 1989)

Mean	Avg	64.110	54.430	46.140	33.130	25.150	20.160	18.680	24.540	36.490	54.470	60.740	61.680	**41.589**
flows	Low	27.910	18.610	16.630	10.540	10.620	9.716	7.303	4.556	8.736	10.830	24.540	17.580	**30.712**
(m^3s^{-1})	High	119.100	104.000	98.410	52.050	73.120	51.860	44.640	85.740	91.360	90.150	115.000	125.500	**52.784**
Peak flow (m^3s^{-1})		150.50	140.80	122.20	91.85	92.02	78.48	86.12	115.30	121.60	138.50	145.70	148.50	**150.50**
Runoff (mm)		219	169	158	109	86	67	64	84	121	186	201	211	**1674**
Rainfall (mm)		234	147	183	99	121	112	123	151	214	231	229	224	**2068**

Factors affecting flow regime: S
Station type: VA

1990 runoff is 127% of previous mean
rainfall 131%

085003 Falloch at Glen Falloch 1990

Measuring authority: CRPB
First year: 1970

Grid reference: 27 (NN) 321 197
Level stn. (m OD): 9.50

Catchment area (sq km): 80.3
Max alt. (m OD): 1130

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	12.830	18.500	21.400	4.283	0.787	2.541	2.328	3.701	6.461	9.588	3.357	7.558	**7.729**
(m^3s^{-1})	Peak	130.80	173.30	200.40	42.07	4.59	106.40	43.16	42.24	169.50	158.40	43.08	178.60	**200.40**
Runoff (mm)		428	557	714	138	26	82	78	123	209	320	108	252	**3035**
Rainfall (mm)		625	675	696	215	55	152	125	195	274	384	157	395	**3948**

Monthly and yearly statistics for previous record (Oct 1970 to Dec 1989—incomplete or missing months total 0.3 years)

Mean	Avg	8.636	5.087	6.338	2.873	2.835	2.245	2.685	3.891	6.614	7.358	8.429	8.315	**5.449**
flows	Low	1.926	0.489	0.853	0.408	0.133	0.328	0.634	0.339	0.751	1.362	3.069	1.416	**4.440**
(m^3s^{-1})	High	19.630	8.387	11.750	6.325	10.980	5.609	7.401	10.510	11.210	16.050	14.670	15.740	**7.003**
Peak flow (m^3s^{-1})		205.70	153.00	178.60	135.00	152.40	138.90	174.70	213.10	197.70	226.70	187.20	187.40	**226.70**
Runoff (mm)		288	155	211	93	95	72	90	130	213	245	272	277	**2142**
Rainfall (mm)		357	211	260	118	141	135	166	201	299	320	348	348	**2904**

Factors affecting flow regime:
Station type: VA

1990 runoff is 142% of previous mean
rainfall 136%

090003 Nevis at Claggan 1990

Measuring authority: HRPB
First year: 1982
Grid reference: 27 (NN) 116 742
Level stn. (m OD): 3.60
Catchment area (sq km): 76.8
Max alt. (m OD): 1344

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	13.000	17.990	25.920	6.953	2.411	3.211	3.646	4.878	9.118	10.310	3.927	7.696	9.051
(m^3s^{-1}):	Peak	105.70	123.40	143.10	40.89	22.35	41.13	46.44	33.95	219.00	126.40	42.29	68.21	219.00
Runoff (mm)		453	567	904	235	84	108	127	170	308	359	133	268	3718
Rainfall (mm)		547	625	887	174	45	102	157	202	237	393	124	367	3860

Monthly and yearly statistics for previous record (Sep 1982 to Dec 1989)

Mean	Avg.	9.043	5.832	7.288	4.703	4.285	1.998	3.787	5.560	7.715	9.642	7.388	10.690	6.509
flows	Low	2.517	0.690	2.188	3.017	1.123	0.970	0.907	1.116	2.909	6.446	3.755	2.831	5.186
(m^3s^{-1})	High	17.790	15.510	11.920	6.728	12.600	2.830	8.608	10.580	11.010	16.380	15.360	15.480	7.512
Peak flow (m^3s^{-1})		195.60	156.30	122.50	46.28	67.50	69.35	105.00	130.50	168.20	146.50	110.30	189.00	195.60
Runoff (mm)		315	186	254	159	149	67	131	194	260	336	249	373	2675
Rainfall (mm)*		398	291	389	99	162	86	197	256	285	378	292	386	3219

*(1986-1989)

Factors affecting flow regime.
Station type: VA

1990 runoff is 139% of previous mean
rainfall 120%

094001 Ewe at Poolewe 1990

Measuring authority: HRPB
First year: 1970
Grid reference: 18 (NG) 859 803
Level stn. (m OD): 4.60
Catchment area (sq km): 441.1
Max alt. (m OD): 1014

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	46.480	73.580	94.600	32.990	13.850	15.940	20.570	23.400	44.900	49.670	30.850	35.520	40.020
(m^3s^{-1}):	Peak	89.28	124.60	146.50	42.99	28.36	30.22	44.03	46.00	82.86	82.59	62.57	67.16	146.50
Runoff (mm)		282	404	574	194	84	94	125	142	264	302	181	216	2861
Rainfall (mm)		420	423	697	185	78	135	115	175	274	279	182	347	3310

Monthly and yearly statistics for previous record (Nov 1970 to Dec 1989)

Mean	Avg.	42.460	31.390	28.520	22.400	15.420	12.720	13.830	17.880	31.740	35.870	45.850	45.990	28.658
flows	Low	13.820	10.660	8.842	4.537	3.862	3.725	7.884	6.240	8.046	13.160	21.020	15.740	19.389
(m^3s^{-1})	High	81.130	83.670	54.440	38.270	36.280	27.180	26.180	37.000	57.270	66.220	78.300	81.840	35.549
Peak flow (m^3s^{-1})		177.10	247.70	117.00	73.59	65.63	64.43	45.08	85.46	109.20	125.50	136.10	179.80	247.70
Runoff (mm)		258	174	173	132	94	75	84	109	186	218	269	279	2050
Rainfall (mm)		271	180	215	122	113	118	139	163	249	290	316	306	2482

Factors affecting flow regime: N
Station type: VA

1990 runoff is 140% of previous mean
rainfall 133%

095001 Inver at Little Assynt 1990

Measuring authority: HRPB
First year: 1977
Grid reference: 29 (NC) 147 250
Level stn. (m OD): 60.30
Catchment area (sq km): 137.5
Max alt. (m OD): 988

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	8.671	15.010	23.090	7.259	3.297	6.689	6.478	9.959	12.780	16.580	10.310	10.810	10.895
(m^3s^{-1})	Peak	16.91	24.59	46.36	11.00	7.47	15.34	13.34	26.47	38.15	28.70	23.15	20.07	46.36
Runoff (mm)		169	264	450	137	64	126	126	194	241	323	194	211	2499
Rainfall (mm)		260	272	507	145	78	181	107	244	312	258	186	286	2836

Monthly and yearly statistics for previous record (Aug 1977 to Dec 1989)

Mean	Avg.	11.050	8.556	9.484	5.574	3.938	3.178	4.842	6.274	10.310	12.710	13.010	11.080	8.338
flows	Low	4.082	2.397	4.179	3.453	1.660	1.812	2.432	3.394	5.263	6.227	6.572	4.631	6.956
(m^3s^{-1})	High	19.950	21.150	19.400	7.552	7.131	5.636	10.340	10.050	16.390	21.180	23.960	17.580	10.784
Peak flow (m^3s^{-1})		55.24	63.64	62.82	14.93	20.92	19.72	15.19	23.55	56.50	57.51	50.06	46.65	63.64
Runoff (mm)		215	152	185	105	77	60	94	122	194	248	245	216	1913
Rainfall (mm)*		239	142	213	92	81	104	135	163	243	258	274	249	2193

*(1978-1989)

Factors affecting flow regime: N
Station type: VA

1990 runoff is 131% of previous mean
rainfall 129%

096001 Halladale at Halladale 1990

Measuring authority: HRPB
First year: 1976
Grid reference: 29 (NC) 891 561
Level stn. (m OD): 23.20
Catchment area (sq km): 204.6
Max alt. (m OD): 580

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg.	5.287	9.770	7.725	3.400	0.906	3.807	5.064	8.827	7.851	7.402	10.970	6.255	6.411
(m^3s^{-1}):	Peak	46.21	86.24	48.98	36.55	23.12	65.54	59.33	172.00	98.89	169.10	63.75	55.67	172.00
Runoff (mm)		69	116	101	43	12	48	66	116	99	97	139	82	988
Rainfall (mm)		87	144	124	73	47	103	71	142	136	105	130	98	1260

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1989)

Mean	Avg.	8.541	6.567	6.041	2.791	2.032	1.691	1.719	2.506	4.558	6.990	8.520	7.795	4.974
flows	Low	4.478	1.555	2.907	0.624	0.279	0.271	0.215	0.186	0.447	1.441	2.510	3.004	3.326
(m^3s^{-1})	High	11.900	10.940	9.753	6.442	5.434	4.128	4.943	9.192	7.886	16.560	14.730	12.390	6.418
Peak flow (m^3s^{-1})		98.96	68.52	122.60	69.28	108.00	140.80	129.10	76.64	189.10	126.00	163.20	162.00	189.10
Runoff (mm)		112	78	79	35	27	21	23	33	58	92	108	102	767
Rainfall (mm)		134	75	107	63	59	63	67	79	115	129	137	123	1151

Factors affecting flow regime: N
Station type: VA

1990 runoff is 129% of previous mean
rainfall 109%

101002 Medina at Upper Shide — 1990

Measuring authority: NRA-S
First year: 1965
Grid reference: 40 (SZ) 503 874
Level stn. (m OD): 10.40
Catchment area (sq km): 29.8
Max alt. (m OD): 167

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	0.435	0.795	0.204	0.162	0.103	0.096	0.084	0.074	0.077	0.135	0.136	0.149	**0.200**
(m^3s^{-1})	Peak	4.01	6.35	0.40	0.32	0.15	0.30	0.14	0.14	0.17	2.95	1.28	1.54	**6.35**
Runoff (mm)		39	65	18	14	9	8	8	7	7	12	12	13	**212**
Rainfall (mm)		126	146	5	45	5	60	16	26	61	96	69	70	**725**

Monthly and yearly statistics for previous record (Oct 1965 to Dec 1989—incomplete or missing months total 6.8 years)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	0.442	0.403	0.344	0.268	0.204	0.144	0.126	0.117	0.155	0.234	0.327	0.384	**0.262**
flows	Low	0.150	0.162	0.121	0.104	0.094	0.068	0.073	0.044	0.080	0.110	0.088	0.116	**0.122**
(m^3s^{-1})	High	0.928	0.760	0.903	0.522	0.356	0.212	0.199	0.181	0.365	0.555	0.769	0.663	**0.335**
Peak flow (m^3s^{-1})		6.47	6.00	7.28	3.855	7.00	1.79	3.72	1.74	3.74	4.73	8.64	6.30	**8.64**
Runoff (mm)		40	33	31	23	18	12	11	11	14	21	28	35	**277**
Rainfall (mm)*		90	67	95	49	60	48	50	58	59	109	78	107	**870**

*(1966-1989)

Factors affecting flow regime: G I
Station type: FL

1990 runoff is 76% of previous mean
rainfall 83%

201008 Derg at Castlederg — 1990

Measuring authority: DOEN
First year: 1976
Grid reference: *23* (IH) 265 842
Level stn. (m OD): 43.00
Catchment area (sq km): 337.3
Max alt. (m OD): 543

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	30.270	35.460	19.950	11.820	3.035	8.503	6.929	8.072	8.581	32.270	17.460	22.050	**16.941**
(m^3s^{-1})	Peak	122.60	136.10	130.50	39.51	13.51	72.45	41.20	59.20	76.50	219.00	132.00	155.00	**219.00**
Runoff (mm)		240	254	158	91	24	65	55	64	66	256	134	175	**1584**
Rainfall (mm)		273	251	119	88	46	138	87	120	97	279	129	216	**1843**

Monthly and yearly statistics for previous record (Jan 1976 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	22.440	15.190	17.250	7.530	6.650	4.786	5.795	9.573	14.300	17.980	20.180	20.430	**13.516**
flows	Low	12.090	2.356	8.844	1.862	0.534	1.048	1.142	0.258	1.703	9.480	7.358	8.234	**11.403**
(m^3s^{-1})	High	33.100	29.140	28.480	15.360	17.200	11.230	11.710	30.260	30.630	30.740	35.830	32.690	**15.763**
Peak flow (m^3s^{-1})		202.60	187.30	159.50	135.60	163.50	87.33	161.00	176.90	232.90	223.20	205.20	187.30	**232.90**
Runoff (mm)		178	110	137	58	53	37	46	76	110	143	155	162	**1265**
Rainfall (mm)*		195	115	173	87	91	77	114	160	145	198	133	183	**1671**

*(1983-1989)

Factors affecting flow regime: E
Station type: VA
Comment: 1990 data are provisional

1990 runoff is 125% of previous mean
rainfall 110%

203012 Ballinderry at Ballinderry Bridge — 1990

Measuring authority: DOEN
First year: 1970
Grid reference: *23* (IH) 926 799
Level stn. (m OD): 16.00
Catchment area (sq km): 419.5
Max alt. (m OD): 476

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	17.120	25.040	10.090	6.369	3.652	4.380	4.820	2.942	2.374	13.500	12.800	14.000	**9.757**
(m^3s^{-1})	Peak	135.00	125.90	29.05	22.59	14.71	28.75	31.60	18.00	5.59	98.70	123.00		
Runoff (mm)		109	144	64	39	23	27	31	19	15	86	79	89	**725**
Rainfall (mm)		155	204	60	65	50	132	65	85	44	192	98	106	**1256**

Monthly and yearly statistics for previous record (Jul 1970 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	16.150	12.250	10.920	6.710	5.296	3.694	2.811	4.985	6.055	9.252	11.980	13.940	**8.660**
flows	Low	9.339	4.805	5.502	3.515	2.454	1.627	1.518	1.060	1.965	2.331	5.122	4.946	**5.251**
(m^3s^{-1})	High	24.690	24.430	17.260	13.140	12.740	7.524	7.496	17.640	21.020	17.200	21.860	21.490	**11.532**
Peak flow (m^3s^{-1})		183.20	139.90	98.37	106.70	109.20	61.60	127.20	140.10	141.00	194.80	117.70	138.00	**194.80**
Runoff (mm)		103	72	70	41	34	23	18	32	37	59	74	89	**652**
Rainfall (mm)*		124	70	113	66	63	63	70	119	90	120	82	108	**1088**

*(1983-1989)

Factors affecting flow regime: N
Station type: VA
Comment: 1990 data are provisional

1990 runoff is 111% of previous mean
rainfall 115%

203028 Agivey at White Hill — 1990

Measuring authority: DOEN
First year: 1972
Grid reference: *24* (IC) 883 193
Level stn. (m OD): 17.00
Catchment area (sq km): 98.9
Max alt. (m OD): 461

Hydrometric statistics for 1990

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Flows	Avg	5.421	8.191	2.673	2.478	1.034	2.290	2.224	0.963	0.883	5.800	5.297	4.300	**3.389**
(m^3s^{-1})	Peak	61.84	62.94	10.50	21.01	13.55	26.12	16.70	6.65	4.08	98.60	58.40	48.30	**98.60**
Runoff (mm)		147	200	72	65	28	60	60	26	23	157	139	116	**1093**
Rainfall (mm)		153	217	66	96	50	150	84	66	49	233	126	130	**1420**

Monthly and yearly statistics for previous record (Dec 1972 to Dec 1989)

		JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	Year
Mean	Avg	5.298	3.843	3.324	1.850	1.516	0.985	0.921	1.572	2.340	3.858	3.700	4.467	**2.805**
flows	Low	2.609	0.847	1.384	0.870	0.282	0.340	0.190	0.212	0.421	1.841	0.815	2.218	**2.185**
(m^3s^{-1})	High	7.902	7.416	5.203	4.758	3.909	2.389	1.775	5.077	6.371	6.337	8.405	7.077	**3.599**
Peak flow (m^3s^{-1})		113.50	98.86	46.04	43.59	42.39	53.66	38.34	66.31	76.27	159.30	93.97	70.55	**159.30**
Runoff (mm)		143	95	90	48	41	26	25	43	61	104	97	121	**895**
Rainfall (mm)		148	92	110	63	75	68	77	95	104	134	117	126	**1209**

Factors affecting flow regime: N
Station type: VA
Comment: 1990 data are provisional

1990 runoff is 122% of previous mean
rainfall 117%

THE SURFACE WATER DATA RETRIEVAL SERVICE

The Surface Water Archive comprises some 27,000 station-years of daily river flows and incorporates data from over 1300 gauging stations throughout the United Kingdom. In addition to gauged flow data, naturalised data have been derived from the records of a small number of gauging stations. Catchment areal rainfall and the highest instantaneous flow, when available, are also archived on a monthly basis.

In order that the contents of the archive may be readily accessible, a suite of programs has been developed to provide a selection of retrieval options. Descriptions of these options are listed below, and examples of the computer output are given on pages 139 to 147. The data retrieval programs have been designed to allow flexibility in the presentation of the options, particularly those producing graphical output. Before finalising a data request it is recommended that the Concise Register of Gauging Stations on pages 148 to 153, and the Summary of Archived Data on pages 154 to 162, be consulted to check the availability of suitable data sets.

In response to user requirements the data retrieval facilities are being continually extended. A wide range of specialist analyses and presentations is now available. Individuals having data requirements not catered for in the standard retrieval suite are invited to discuss their particular needs – address opposite.

Retrievals are normally available on line-printer listings, magnetic tape or IBM compatible disk, or as hydrograph plots.

Cost of Service

To cover the computing and handling costs, a moderate charge will be made depending on the output options selected. Estimates of these charges may be obtained on request; the right to amend or waive charges is reserved.

Requests for Retrieval Options

Requests for retrieval options should include: the name and address to which output should be directed, the gauging stations for which data are required together with the period of record of interest and the title of the required options. Where possible, a daytime telephone number should be given.

Requests should be addressed to:

Surface Water Archive Office
Institute of Hydrology
WALLINGFORD
OXFORDSHIRE OX10 8BB

Tel: (0491) 38800 Fax: (0491) 32256

Hydrological Data at the Institute of Hydrology

The Surface Water Archive is one of several major sources of hydrological data held at Wallingford. Others include an archive of flood peaks from over 600 catchments, a flood event archive comprising rainfall and river flows at short time intervals for over 4000 individual events and experimental catchment data for Plynlimon (mid-Wales) and Balquhidder (Scotland). Data may be retrieved from these sources in a variety of formats. Advice can also be given on equivalent European data through staff involved in the FRIEND project of the International Hydrological Programme.

The Surface Water Archive is part of the National Water Archive, one of the designated data centres of the Natural Environment Research Council.

LIST OF SURFACE WATER RETRIEVAL OPTIONS*

OPTION NUMBER	TITLE	NOTES
1	Table of daily mean gauged discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.
	Table of daily mean naturalised discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.
	Yearbook data tabulation (daily)	River flow and catchment rainfall data for a specified year with basic gauging station and catchment details and flow statistics derived from the historical record.
	Table of monthly mean gauged discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.

*To enable the suitability of individual flow records for particular applications to be assessed more effectively all retrievals are accompanied by the relevant gauging station and catchment details (where available).

	Table of monthly mean naturalised discharges	Includes monthly and annual summary statistics. Flows in cubic metres per second.
	Yearbook data tabulation (monthly)	Monthly river flow and catchment rainfall data for a specified year together with comparative statistics derived from the historical record. Naturalised flows (where available) – and the corresponding runoff – may also be tabulated.
	Table of monthly extreme flows	The lowest and highest daily mean flows, together with the highest instantaneous flow and date of occurrence (where available). Flows in cubic metres per second. Includes summary statistics.
	Table of catchment monthly rainfall	Rainfall totals in millimetres and as a percentage of the 1941–70 catchment average. Includes summary statistics.
	Table of catchment monthly areal rainfall and runoff	Runoff is normally derived from the monthly mean gauged flow. An additional listing is provided for catchments with naturalised flow records. Includes summary statistics. Rainfall and runoff totals are in millimetres.
10	Hydrographs of daily mean flows	Choices of scale, units, truncation level and overlay grid pattern are available. The period of record maximum and minimum flows, or the mean flow, may be included. The plots may be based on single or n-day means, or on n-day running mean flows.
11	Hydrographs of monthly mean flows	Choices of scale, units and overlay grid pattern are available. The period of record maximum, minimum and mean flows may be included.
12	Flow duration statistics	Tabulation of the 1–99 percentile flows with optional plot of the flow duration curve. The percentiles may be derived from daily flows or n-day averages and the analysis may be restricted to nominated periods within the year, e.g. April-September only. Choices of scales, grid marking and units are available and the percentiles may be expressed as a percentage of the average flow or of a nominated flow.
	Table of gauging station reference information	Tabulation of selected gauging station details and catchment characteristics for nominated gauging stations.
	Table of hydrometric statistics	Provides a comparison between summary statistics for a selected year, or a group of years, and the corresponding statistics for a nominated period of record.
	Gauging station and catchment description	A brief summary of the gauging station, its history and major influences on the flow regime, together with catchment details.
16	River flow pattern plots	Three plots on an A4 sheet: a) daily mean flow hydrograph for a selected year b) monthly mean flow hydrograph for the selected year. The maximum and minimum monthly flows, together with the 30-day running mean for the preceding period of record may be included c) flow duration curve for the specified year. A flow duration curve for the period of record may be included.
	Gauging station summary sheet	Includes a daily flow hydrograph (with period of record extreme values) and flow duration curve together with summary statistics relating to river flow, catchment runoff and catchment rainfall. A description of the gauging station and catchment is also provided together with selected catchment characteristics and a concise summary of the archived data.

OPTION 1 TABLE OF DAILY MEAN GAUGED DISCHARGES

039001 THAMES AT KINGSTON — DAILY MEAN GAUGED DISCHARGES IN CUBIC METRES PER SECOND

1981

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	19.190	10.920	37.280	13.900	8.927	16.710	3.008	3.249	1.272	39.130	44.220	33.430
2	19.140	11.980	40.710	12.020	13.230	29.010	3.125	2.242	1.305	63.770	35.000	27.270
3	23.450	43.450	28.700	10.850	18.080	18.470	3.740	1.919	1.235	105.200	29.010	23.180
4	17.580	28.340	23.290	9.823	18.300	15.690	3.109	1.857	1.157	78.200	24.830	20.440
5	15.950	22.470	21.020	8.913	17.550	13.840	3.043	2.091	1.109	58.640	20.230	17.890
6	15.520	19.190	21.440	8.200	19.040	12.160	3.231	8.561	1.078	44.100	17.210	16.600
7	13.830	17.750	33.840	7.679	17.730	11.390	2.662	4.332	1.079	33.600	15.170	31.070
8	12.870	16.930	37.610	7.316	15.710	10.670	2.441	3.192	1.106	30.360	13.260	69.430
9	16.190	20.830	223.400	7.043	13.770	9.451	2.283	2.787	1.096	33.360	11.630	41.100
10	14.200	18.420	173.500	6.894	29.540	10.960	2.174	2.405	1.228	31.090	10.560	40.460
11	11.690	15.290	136.900	7.144	17.620	17.580	2.037	2.200	1.830	30.730	10.360	69.490
12	14.250	15.010	107.300	5.962	14.770	10.980	2.084	2.037	2.238	29.440	9.672	41.650
13	13.650	13.250	95.870	5.422	12.960	9.766	2.115	1.920	2.264	23.360	8.364	104.300
14	80.200	11.940	64.940	5.040	12.020	9.056	2.013	1.868	2.418	21.270	7.645	136.100
15	59.900	11.250	47.040	4.826	18.840	8.388	1.993	1.810	4.032	34.210	7.235	76.980
16	59.230	10.400	36.300	4.583	18.690	7.624	1.997	1.688	2.511	23.060	7.329	48.700
17	59.010	9.654	28.140	4.267	33.340	7.013	1.939	1.564	4.231	26.540	8.770	35.680
18	61.350	8.956	23.000	4.017	28.820	6.398	1.814	1.518	21.100	25.060	31.920	26.640
19	51.280	8.265	19.490	3.848	21.890	5.996	1.918	1.597	42.080	32.680	45.490	22.260
20	51.260	7.799	16.960	3.671	24.980	5.551	1.882	2.931	34.500	76.020	55.820	83.240
21	57.170	13.540	54.130	3.520	18.270	4.922	2.531	2.170	23.510	57.400	41.600	40.630
22	44.360	14.310	57.040	3.454	16.660	4.532	8.875	1.847	17.760	42.990	32.140	29.310
23	36.600	31.930	44.340	3.320	18.970	4.320	5.221	1.727	14.530	32.760	27.860	23.180
24	32.140	16.980	39.990	3.738	23.800	4.180	3.528	1.605	20.270	79.240	22.910	18.860
25	25.910	14.590	38.640	4.100	31.200	3.912	2.786	1.512	16.820	100.000	19.190	16.110
26	21.520	13.620	49.640	10.110	25.570	3.759	2.607	1.422	15.610	63.680	19.850	18.300
27	18.590	24.220	32.660	24.990	24.870	3.541	2.319	1.355	15.740	49.610	35.840	42.330
28	16.460	22.710	26.900	13.750	20.850	3.346	2.151	1.310	12.460	40.030	36.720	65.270
29	14.910		22.310	14.700	18.340	3.165	2.000	1.279	12.950	36.140	30.400	74.130
30	13.190		18.380	10.390	16.400	3.035	1.892	1.246	16.350	60.950	44.110	88.900
31	11.850		15.890		15.370		2.710	1.224		52.860		53.640
MISSING DAYS	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	29.827	16.857	52.164	7.776	19.552	9.114	2.749	2.208	9.896	47.732	24.213	46.348
MIN	11.690	7.799	15.890	3.320	8.927	3.035	1.814	1.224	1.078	21.270	7.235	16.110
MAX	80.200	43.450	223.400	24.990	33.340	29.010	8.875	8.561	42.080	105.200	55.820	136.100
MONTHLY TOTALS (CUMEC.DAYS)												
	924.64	471.99	1618.43	233.29	606.10	273.42	85.23	68.44	296.87	1479.68	726.39	1436.79

SUMMARY: MAX 223.400 ON 9 MAR
MIN 1.078 ON 6 SEP
MEAN 22.519

OPTION 2 TABLE OF DAILY MEAN NATURALISED DISCHARGES

039001 THAMES AT KINGSTON — DAILY MEAN NATURALISED DISCHARGES IN CUBIC METRES PER SECOND

1981

DAY	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
1	73.100	67.000	83.130	228.000	104.000	99.200	52.800	72.200	31.700	113.000	85.400	82.600
2	71.700	66.200	159.000	227.000	86.200	142.000	50.700	56.800	31.000	104.000	84.000	72.400
3	67.850	68.300	232.000	192.000	87.100	129.000	50.700	52.200	31.700	80.300	76.600	68.600
4	65.700	79.100	196.000	135.000	96.700	142.000	48.700	42.500	30.900	77.600	65.600	69.100
5	65.200	81.100	139.000	132.000	93.600	126.000	48.900	42.600	29.000	72.100	68.100	68.800
6	68.500	63.000	127.000	117.000	84.000	102.000	45.800	120.000	29.200	93.300	61.100	69.400
7	69.300	60.200	128.000	115.000	81.800	91.100	45.500	125.000	29.800	111.000	61.800	72.400
8	74.300	62.700	189.000	109.000	78.200	93.400	46.800	79.100	30.300	75.400	61.000	116.000
9	74.000	83.200	216.000	96.800	77.600	89.100	45.100	67.600	29.700	79.100	60.600	127.000
10	75.700	65.700	242.000	105.000	92.800	82.000	43.500	64.400	28.300	79.100	57.100	104.000
11	82.300	67.800	267.000	101.000	97.100	90.300	39.800	60.600	31.300	78.400	57.600	98.900
12	80.350	67.300	277.000	97.900	89.900	67.100	44.900	56.500	39.100	78.600	57.500	87.000
13	78.700	63.500	273.000	96.000	74.000	78.300	42.800	43.100	37.700	63.600	57.200	90.100
14	76.800	61.000	289.000	120.000	71.400	73.600	41.200	41.500	38.500	67.200	55.400	230.000
15	99.400	56.700	274.000	114.000	77.700	70.300	43.200	40.600	48.600	67.800	53.100	314.000
16	107.000	59.900	251.000	84.930	92.300	69.300	40.800	38.600	41.300	66.700	56.600	279.000
17	111.000	55.300	218.000	85.100	91.200	67.600	41.600	37.000	36.330	69.600	73.700	228.000
18	121.000	55.300	180.000	80.900	93.100	65.400	42.000	37.700	39.930	85.700	96.800	145.000
19	112.000	54.500	139.000	76.200	92.200	66.300	41.600	37.800	49.800	81.300	97.800	116.000
20	109.000	56.300	127.000	76.500	100.000	64.400	41.400	37.400	104.000	136.000	121.000	110.000
21	109.000	53.100	117.000	75.100	122.000	64.200	40.300	36.230	67.300	179.000	146.000	156.000
22	113.000	53.800	173.000	75.300	102.000	59.800	55.700	36.400	81.600	147.000	131.000	162.000
23	111.000	58.100	208.000	73.100	90.400	61.000	55.400	36.100	40.100	102.000	97.900	132.000
24	95.800	60.100	204.000	72.400	111.000	61.700	55.300	35.100	42.700	92.600	90.400	101.000
25	86.100	59.200	204.000	79.500	177.000	61.000	48.000	34.900	51.900	94.100	72.000	102.000
26	78.800	61.000	203.000	128.000	266.000	57.100	47.400	32.800	131.000	107.000	75.600	99.300
27	77.500	61.000	181.000	183.000	267.000	57.700	39.300	34.300	162.000	90.900	76.800	94.600
28	72.500	64.800	131.000	194.000	212.000	57.400	37.600	32.700	98.300	65.500	100.000	111.000
29	71.800		135.000	174.000	171.000	54.200	39.400	32.400	73.600	80.300	89.500	218.000
30	71.700		145.000	140.000	122.000	50.700	37.500	32.200	101.000	81.400	87.700	295.000
31	67.500		204.000		108.000		44.500	30.300		62.100		264.000
MISSING DAYS	0	0	0	0	0	0	0	0	0	0	0	0
MEAN	85.003	62.336	189.455	119.373	113.203	84.113	45.090	48.245	53.267	91.045	79.030	138.116
MIN	65.200	53.100	83.100	72.400	71.400	50.700	37.500	30.300	28.300	63.600	53.100	66.600
MAX	121.000	81.100	289.000	228.000	267.000	209.000	55.700	125.000	162.000	179.000	146.000	314.000
MONTHLY TOTALS (CUMEC.DAYS)												
	2635.10	1745.40	5873.10	3581.20	3509.30	2523.40	1397.80	1495.60	1597.40	2822.40	2370.90	4281.60

SUMMARY: MAX 314.000 ON 15 DEC
MIN 28.300 ON 10 SEP
MEAN 92.694

OPTION 3 YEARBOOK DATA TABULATION (DAILY)

050001 Yew at Uxbridge 1986

Measuring authority: NRA-SW Grid reference: 21 (SS) 608 237 Catchment area (sq km): 826.2

First year: 1958 Level stn. to OD: 14.1 Max alt. (m OD): 604

DAILY MEAN GAUGED DISCHARGES (cubic metres per second)

Day	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	45.922	16.995	3.441	31.022	11.699	6.458	4.707	3.763	15.832	3.336	42.787	24.018
2	45.671	15.510	3.541	26.433	10.648	5.675	3.970	3.965	13.766	3.249	31.469	22.266
3	33.091	14.188	3.499	21.680	9.470	5.571	3.617	3.053	13.607	3.018	28.826	18.010
4	37.836	12.495	9.708	18.030	12.338	5.018	4.544	9.236	10.314	2.961	23.480	16.196
5	33.756	11.366	21.779	15.390	10.182	4.621	3.672	5.598	9.151	2.784	22.010	21.573
6	28.560	10.417	10.379	13.836	8.294	4.282	5.603	5.377	8.412	2.708	19.850	15.573
7	62.257	9.347	8.387	14.586	8.795	4.127	4.203	7.406	7.693	2.657	19.707	24.952
8	47.415	8.383	7.546	19.408	8.632	3.955	4.538	5.801	7.056	2.578	21.696	69.161
9	53.912	7.508	10.315	14.122	8.156	12.460	3.770	4.976	6.526	2.552	29.678	47.764
10	70.537	7.269	9.515	11.702	8.123	36.598	3.414	12.831	5.789	2.665	37.135	37.930
11	59.685	6.796	7.759	10.316	7.324	37.555	3.788	45.095	5.456	2.570	31.705	69.360
12	51.120	5.554	7.063	10.111	7.686	20.524	3.544	14.651	5.058	2.405	25.056	69.886
13	46.066	6.389	6.513	11.176	7.135	16.077	3.194	11.316	17.067	2.405	40.861	68.750
14	40.020	5.735	6.018	21.978	44.508	13.286	2.978	9.582	21.159	2.423	127.383	50.837
15	36.537	5.361	5.759	31.328	37.785	11.171	2.812	7.743	11.432	2.525	57.152	89.636
16	32.206	5.179	5.363	25.399	25.283	9.558	2.668	6.513	9.663	2.147	47.402	75.175
17	31.718	4.861	5.915	22.478	27.619	8.339	2.772	5.821	7.866	2.037	48.472	66.340
18	36.256	4.614	6.608	19.092	21.358	7.399	2.158	21.257	6.809	2.156	109.704	60.550
19	98.588	4.223	7.124	23.908	17.116	6.633	2.062	13.415	6.159	3.303	176.727	63.493
20	52.951	4.099	7.807	43.695	16.262	5.986	2.131	9.174	5.758	19.324	104.960	60.592
21	52.761	3.966	6.475	50.706	15.449	7.548	2.256	8.659	5.431	29.031	80.659	48.165
22	74.491	3.726	7.247	44.683	12.802	8.406	2.109	20.983	5.104	55.352	66.497	36.562
23	99.038	3.903	16.096	47.516	11.208	6.503	1.941	20.255	4.871	45.550	66.009	29.293
24	60.162	3.661	37.112	41.624	10.076	7.160	1.861	20.968	4.563	34.370	63.518	25.077
25	44.132	4.131	23.093	34.778	9.149	5.670	1.992	70.828	4.244	65.962	71.424	67.277
26	36.861	4.976	22.505	27.679	8.483	4.666	2.253	57.460	4.032	34.072	75.556	43.610
27	33.785	4.649	29.563	22.322	7.809	4.137	2.141	44.335	3.899	56.152	56.160	37.013
28	30.542	4.296	45.032	18.819	7.203	3.957	2.764	38.560	3.790	77.885	43.063	34.930
29	26.791		62.048	15.700	6.561	6.985	3.030	29.169	3.607	60.458	33.020	32.123
30	21.377		49.238	13.274	5.330	6.056	3.301	22.597	3.408	47.819	26.239	70.373
31	18.521		39.862		8.266		4.837	18.122		37.569		79.129
Average	42.730	7.155	15.190	24.090	13.280	9.540	3.513	14.010	7.911	19.150	56.320	47.040
Lowest	18.521	3.661	3.441	10.111	6.330	3.935	1.861	3.035	3.408	2.037	19.707	16.196
Highest	89.088	16.995	49.238	50.706	44.508	37.555	8.672	70.828	21.159	77.885	176.727	89.636
Peak flow	105.526	18.283	60.897	65.314	99.689	79.066	10.853	124.530	41.069	97.651	251.996	123.958
Day of peak	10	1	24	21	15	10	5	11	14	28	19	15
Monthly total (million cu m)	114.50	17.31	40.67	62.43	35.56	24.73	9.41	48.23	20.51	51.30	146.80	126.00
Runoff (mm)	139	21	49	76	43	30	11	58	25	62	170	152
Rainfall (mm)	148	3	106	97	93	77	65	151	39	138	183	196

STATISTICS OF MONTHLY DATA FOR PREVIOUS RECORD (Oct 1958 to Dec 1985)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean flows:	Avg.	35.970	28.910	20.510	13.710	9.688	5.213	4.628	5.676	7.779	14.720	25.260	37.230
	Low	6.657	5.246	7.449	3.889	2.075	1.529	0.793	0.423	0.561	1.041	5.655	13.210
	(year)	1963	1959	1984	1974	1976	1984	1984	1976	1959	1978	1978	1963
	High	62.100	54.760	52.140	32.800	37.000	14.630	23.390	19.130	47.670	77.360	58.500	75.670
	(year)	1984	1970	1981	1966	1983	1977	1968	1985	1974	1960	1963	1965
Runoff:	Avg.	117	85	67	43	31	16	15	18	24	61	89	121
	Low	22	10	24	12	7	4	3	1	3	3	11	43
	High	201	160	169	103	120	92	76	62	150	251	184	239
Rainfall:	Avg.	132	86	90	69	72	66	71	87	95	112	128	140
	Low	28	5	18	8	28	10	23	24	14	14	56	41
	High	242	171	183	145	146	164	152	150	247	278	239	271

SUMMARY STATISTICS

	FOR 1986		FOR RECORD PRECEDING 1986		1986 AS % OF PRE-1986
Mean flow (m3/s)	21.910		17.990		122
Lowest yearly mean			11.310	1964	
Highest yearly mean			27.599	1960	
Lowest monthly mean	3.513	Jul	0.423	Aug 1976	
Highest monthly mean	56.320	Nov	77.360	Oct 1960	
Lowest daily mean	1.861	24 Jul	0.200	28 Aug 1976	
Highest daily mean	176.727	19 Nov	363.800	4 Dec 1960	
Peak	251.996	19 Nov	644.900	4 Dec 1960	
10 %ile	53.770		46.690		115
50 %ile	11.450		9.291		123
95 %ile	2.472		1.176		211
Annual total (million cu m)	691.00		567.70		122
Annual runoff (mm)	836		687		122
Annual rainfall (mm)	1316		1143		115
(1941-70 rainfall average (mm)			1183)		

FACTORS AFFECTING FLOW REGIME

- Reservoir(s) in catchment.
- Abstraction for public water supplies.
- Augmentation from effluent returns.

STATION AND CATCHMENT DESCRIPTION

Velocity-area station; main channel 36m wide; cableway span 54.9m. Rock step d/s forms the control. Bypassing begins at about 3.7m on the rb, but a good rating accomodates this. Significant modification to flows owing to PWS abstraction. Some naturalised flow data available.
Large rural catchment - drains both Dartmoor (granite) to the south and Devonian shales and sandstones of Exmoor to the north. Central area is underlain mainly by Culm shales and sandstones (Carboniferous). Agriculture is conditioned by the grade 5 and 6 soils.

OPTION 4 TABLE OF MONTHLY MEAN GAUGED DISCHARGES

050001 Tee at Uaberleigh

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1980	25.180	45.920	27.450	14.680	2.415	9.960	5.788	5.613	11.430	40.530	28.950	35.350	21.170
1981	29.830	16.690	52.160	7.727	10.550	9.113	2.758	2.204	9.892	67.230	26.210	44.550	22.520
1982	40.860	18.540	62.170	6.041	2.462	2.727	8.563	2.585	4.278	24.260	52.830	55.450	21.730
1983	48.920	19.160	14.660	17.880	37.200	6.472	1.650	0.836	5.245	14.480	111.110	46.910	28.680
1984	67.120	96.490	7.444	5.457	2.255	1.529	0.791	0.887	1.589	20.660	49.390	97.580	18.920
1985	26.030	19.950	15.650	25.020	3.563	1.986	1.987	19.130	9.617	9.648	6.656	26.830	15.150
1986	62.730	7.155	15.190	24.080	13.280	9.560	3.313	18.010	7.911	39.130	54.320	47.640	21.910
1987	20.020	19.650	27.280	28.850	3.591	5.087	3.591	1.743	3.814	37.390	34.170	15.960	16.170
Mean	37.510	22.630	25.220	16.200	10.510	6.051	4.177	6.368	6.477	26.140	32.720	39.030	19.530
Min	20.020	7.155	7.444	5.457	2.255	1.529	0.791	0.836	1.814	9.648	6.656	15.960	15.150
	1987	1985	1984	1984	1984	1986	1984	1984	1987	1985	1985	1987	1985
Max	67.120	96.490	62.160	28.850	37.200	9.960	8.788	19.130	11.430	67.230	54.320	97.580	22.520
	1984	1980	1981	1987	1983	1980	1980	1985	1980	1981	1986	1984	1981

The summary relates exclusively to the years shown.

OPTION 5 TABLE OF MONTHLY MEAN NATURALISED DISCHARGES

039001 Thames at Kingston

Date	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1980	136.600	151.400	131.730	102.800	51.780	50.440	46.070	40.750	41.660	75.730	75.690	86.950	82.430
1981	85.330	83.140	189.530	119.600	113.200	84.310	45.090	48.230	53.230	91.050	79.030	178.100	92.690
1982	194.930	158.600	181.030	89.760	58.550	52.350	38.770	31.320	31.900	89.750	129.630	177.200	99.660
1983	128.600	111.200	84.760	128.530	138.830	62.150	43.450	34.360	54.820	37.880	89.160	78.090	77.930
1984	144.500	129.600	139.630	68.340	63.670	61.910	25.710	25.370	30.710	38.840	105.100	127.700	75.240
1985	130.330	154.600	130.730	93.010	76.790	99.190	50.350	55.600	36.770	37.280	36.250	136.100	81.960
1986	201.120	117.000	96.130	125.530	87.450	52.340	37.470	44.100	37.750	61.750	172.000	138.600	91.020
1987	135.630	83.990	111.400	149.100	66.530	66.220	45.660	34.840	36.770	125.900	148.430	82.390	98.800
Mean	161.600	113.800	129.050	109.500	80.980	66.560	41.360	39.550	37.680	67.250	91.910	120.320	86.220
Min	85.300	62.140	84.760	68.340	51.780	43.910	25.710	25.370	30.710	37.280	36.250	78.090	75.240
	1981	1981	1985	1984	1983	1984	1984	1984	1984	1985	1985	1981	1984
Max	231.100	151.400	189.530	149.100	138.800	99.190	50.350	55.600	53.230	125.900	148.400	177.200	99.660
	1986	1983	1981	1987	1983	1985	1985	1985	1981	1987	1987	1982	1982

The summary relates exclusively to the years shown.

OPTION 6 YEARBOOK DATA TABULATION (MONTHLY)

050001 Uaberleigh 1982

Measuring authority: WRC Grid reference: SS608237 Catchment area (sq km): 826.2

First year: 1958 Level stn. (m OD): 14.14 Max alt. (m OD): 604

HYDROMETRIC STATISTICS FOR 1982

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Flows	Avg.	40.860	18.540	62.170	6.041	2.462	2.723	8.563	2.585	4.278	24.260	52.830	55.450	21.730
(m3/s):	Peak	127.60	55.38	143.90	23.89	5.54	12.48	162.20	7.73	25.40	72.35	215.20	241.10	241.10
Runoff	(mm)	132	54	137	19	8	9	28	8	13	79	166	180	833
Rainfall (mm)		106	78	143	24	37	116	67	87	81	129	192	179	1239

MONTHLY AND YEARLY STATISTICS FOR PREVIOUS RECORD (Oct 1958 to Dec 1981)

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
Mean	Avg.	34.490	29.840	20.820	13.730	9.404	5.488	4.782	5.648	8.228	18.950	27.980	36.080	17.891
flows	Low	6.657	3.244	7.918	3.889	2.073	1.434	0.796	0.423	0.881	1.043	3.653	13.210	11.312
(m3/s):	High	50.890	56.760	52.140	32.800	22.140	16.630	23.390	16.440	47.870	77.360	58.500	73.870	27.587
Peak flow (m3/s)		380.80	278.40	339.90	149.40	91.74	160.10	206.00	183.50	312.30	422.10	249.70	644.90	644.90
Runoff	(mm)	112	88	67	43	30	17	16	18	26	63	88	117	683
Rainfall (mm)		127	91	89	70	72	66	74	87	93	112	127	137	1145

Factors affecting flow regime: S P E

Station type: VA

1982 runoff is 122% of previous mean.

rainfall 108%

OPTION 7 TABLE OF MONTHLY EXTREME FLOWS

050201 Tay at Ueberlaigh

Date		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	HI	111.900	76.210	55.420	96.250	7.826	29.930	9.017	78.700	29.110	64.930	12.760	249.400	249.850
	MD	98.430	55.410	41.360	61.730	6.212	21.530	7.505	41.170	23.960	28.900	8.903	136.450	136.420
	LD	5.685	5.358	5.126	5.981	2.076	1.677	2.211	5.161	4.764	3.218	2.854	10.095	1.677
1986	HI	148.590	58.252	65.903	65.110	94.640	29.070	10.850	124.500	61.850	87.650	252.000	125.900	252.000
	MD	89.593	36.992	49.263	50.730	44.530	22.550	8.672	70.850	21.160	77.640	176.703	89.445	176.700
	LD	15.520	3.641	5.441	10.110	6.335	3.935	5.461	3.051	3.488	2.037	19.713	16.700	1.861
1987	HI	167.200	67.800	157.600	205.503	13.820	31.960	13.650	5.635	6.122	113.900	153.600	65.150	205.500
	MD	99.960	44.160	36.440	149.800	6.135	12.610	9.105	3.771	5.774	79.919	105.105	45.310	149.800
	LD	5.682	6.494	8.361	6.837	2.675	2.648	2.552	1.109	1.161	1.811	10.079	6.192	1.161
Max	HI	167.700	76.210	157.600	205.503	99.693	79.070	13.650	124.503	61.050	113.900	252.000	249.600	249.850
		2 Jan	9 Feb	23 Mar	5 Apr	15 May	10 Jun	19 Jul	11 Aug	14 Sep	27 Oct	19 Nov	24 Dec	24 Dec
		1987	1985	1987	1987	1986	1986	1987	1986	1986	1987	1986	1985	1985
Max	MD	99.960	58.630	86.440	148.805	44.530	37.550	9.105	70.850	23.960	79.910	176.700	136.630	176.700
		1 Jan	9 Feb	23 Mar	5 Apr	15 May	11 Jun	19 Jul	25 Aug	3 Sep	27 Oct	19 Nov	24 Dec	19 Nov
		1987	1985	1987	1987	1986	1986	1987	1986	1985	1987	1986	1985	1986
Min	LD	5.682	3.641	5.441	6.807	2.076	1.677	1.861	1.109	1.161	1.811	2.854	6.192	1.161
		31 Jan	26 Feb	1 Mar	30 Apr	31 May	4 Jun	24 Jul	31 Aug	1 Sep	1 Oct	6 Nov	16 Dec	1 Sep
		1987	1986	1986	1987	1985	1985	1986	1987	1987	1987	1985	1987	1987

The summary relates exclusively to the years shown.

HI = Highest instantaneous discharge
MD = Highest daily mean gauged discharge
LD = Lowest fully mean gauged discharge

OPTION 8 TABLE OF CATCHMENT MONTHLY RAINFALL

050801 Tay at Ueberlaigh

Date		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	Rainfall (mm)	95	48	97	90	50	108	70	160	51	60	71	159	1051
	% 1961-70 Mean	75	43	123	125	62	177	85	157	69	93	53	137	98
1986	Rainfall (mm)	148	3	106	97	93	97	65	151	39	138	183	196	1316
	% 1961-73 Mean	117	3	114	139	135	159	79	148	38	172	137	144	111
1987	Rainfall (mm)	29	99	104	97	61	92	61	31	65	222	110	75	1066
	% 1961-73 Mean	23	108	112	135	75	151	74	30	63	196	97	55	90
Mean	(mm)	91	67	102	95	68	99	65	114	52	140	121	143	1164
	(%)	72	51	130	132	84	162	79	117	50	124	96	105	97
Min	(mm)	29	3	97	90	50	92	61	31	39	60	71	75	1051
	(%)	23	3	123	125	62	151	74	30	38	53	53	55	88
	Year	1987	1986	1985	1985	1985	1987	1987	1987	1986	1985	1985	1987	1985
Max	(mm)	148	99	106	97	93	108	70	160	65	222	183	196	1316
	(%)	117	108	134	135	135	177	85	157	63	196	137	144	111
	Year	1986	1987	1986	1987	1986	1985	1985	1985	1987	1987	1986	1986	1986
1961-70 Mean		127	92	79	72	61	61	82	107	104	113	134	136	1161

The summary relates exclusively to the years shown.

OPTION 9 TABLE OF CATCHMENT MONTHLY AREAL RAINFALL AND RUNOFF

050301 Tay at Ueberlaigh

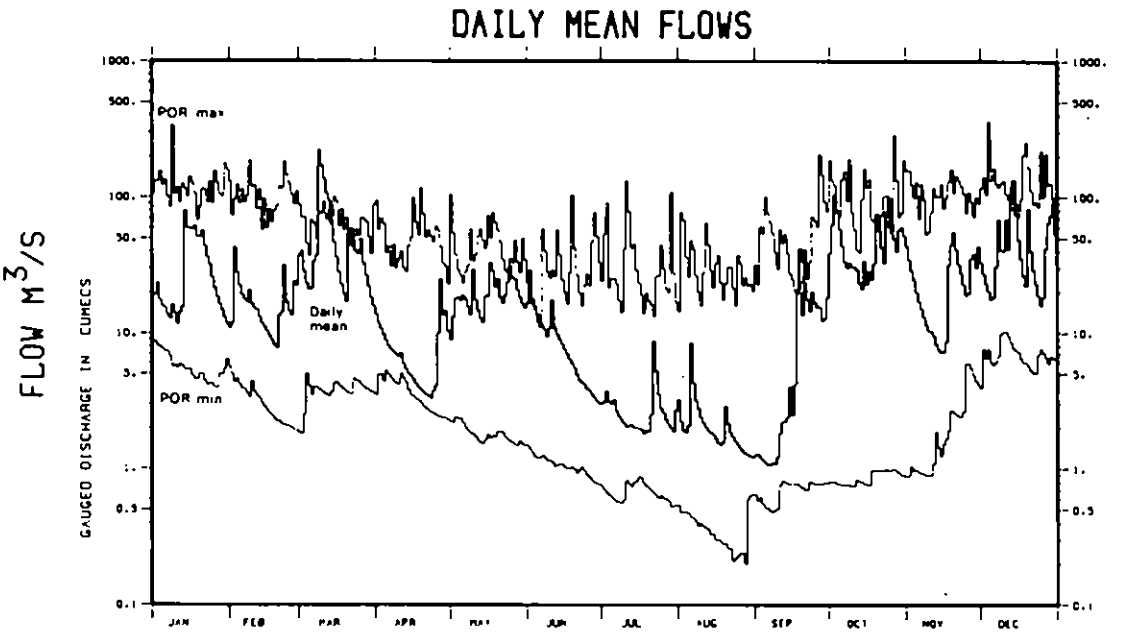
Date		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Year
1985	Rainfall	95	48	97	90	50	108	70	160	51	60	71	159	1051
	Runoff	84	58	91	78	32	19	13	62	30	33	21	119	570
1986	Rainfall	148	3	106	97	93	97	65	151	39	138	183	196	1316
	Runoff	139	21	69	76	45	30	11	58	25	67	170	152	816
1987	Rainfall	29	99	104	97	61	92	61	31	65	222	110	75	1066
	Runoff	65	57	88	91	32	16	12	6	6	105	107	52	617
Rainfall														
Mean	(mm)	91	67	102	95	68	99	65	114	52	140	128	143	1164
Min	(mm)	29	3	97	90	50	92	61	31	39	60	71	75	1051
	Year	1987	1986	1985	1985	1985	1987	1987	1987	1986	1985	1985	1987	1985
Max	(mm)	148	99	106	97	93	108	70	160	65	222	183	196	1316
	Year	1986	1987	1986	1987	1986	1985	1985	1985	1987	1987	1986	1986	1986
Runoff														
Mean	(mm)	96	65	83	82	32	22	12	42	20	66	99	108	677
Min	(mm)	65	21	69	76	12	16	11	6	6	31	21	52	578
	Year	1987	1986	1986	1986	1987	1987	1986	1987	1987	1985	1985	1987	1985
Max	(mm)	139	58	88	91	45	30	13	62	30	105	170	152	838
	Year	1986	1985	1987	1987	1986	1986	1985	1985	1985	1987	1986	1986	1986
% Runoff														
Mean	(%)	>138	96	82	86	52	22	18	37	58	47	77	71	59
Min	(%)	88	58	46	78	25	17	17	19	9	45	30	69	53
	Year	1985	1987	1986	1986	1987	1987	1986	1987	1987	1986	1985	1987	1985
Max	(%)	>100	>100	85	94	46	31	20	39	66	52	93	78	64
	Year	1987	1986	1987	1987	1986	1986	1987	1985	1986	1985	1986	1986	1986

The summary relates exclusively to the years shown.

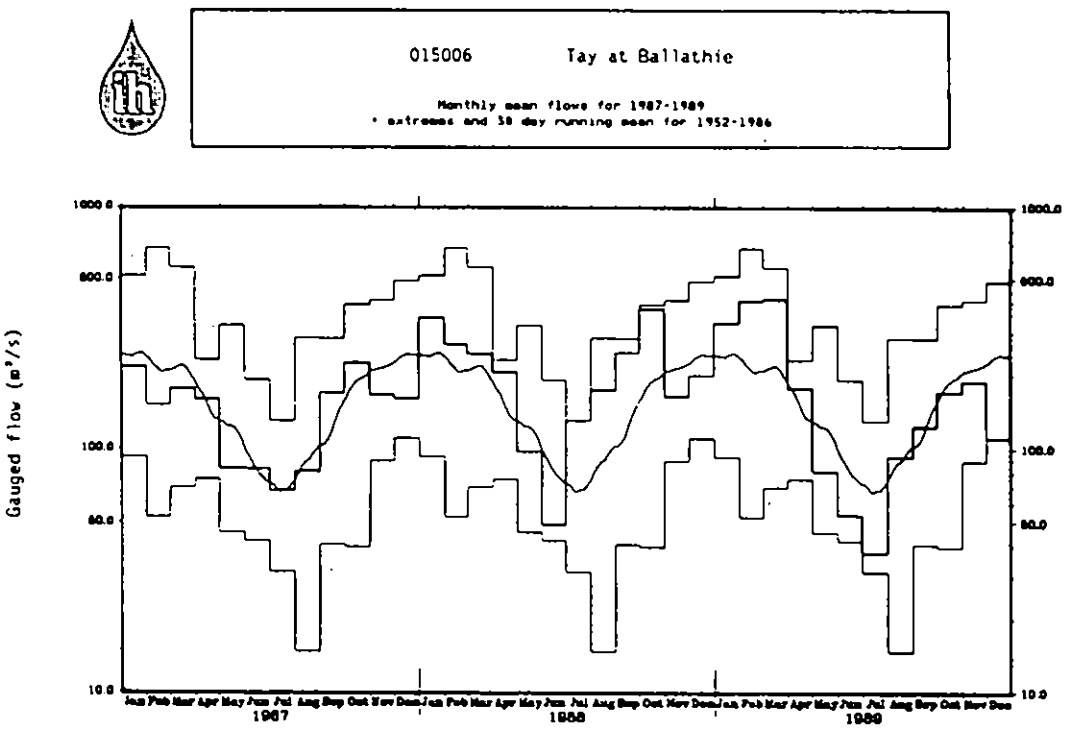
OPTION 10 HYDROGRAPH OF DAILY MEAN FLOWS

050001 TAW AT UMBERLEIGH 1981

Previous record 1958-1980 Catchment area 826.2 km



OPTION 11 HYDROGRAPH OF MONTHLY MEAN FLOWS



OPTION 12 FLOW DURATION STATISTICS

FLOW DURATION TABLE

050001 TAV AT UMBERLEIGH GAUGED FLOWS USED

1 DAY MEAN FLOW EXCEEDED STATED AMOUNT IN CUMECS FOR GIVEN PERCENTAGE OF TIME

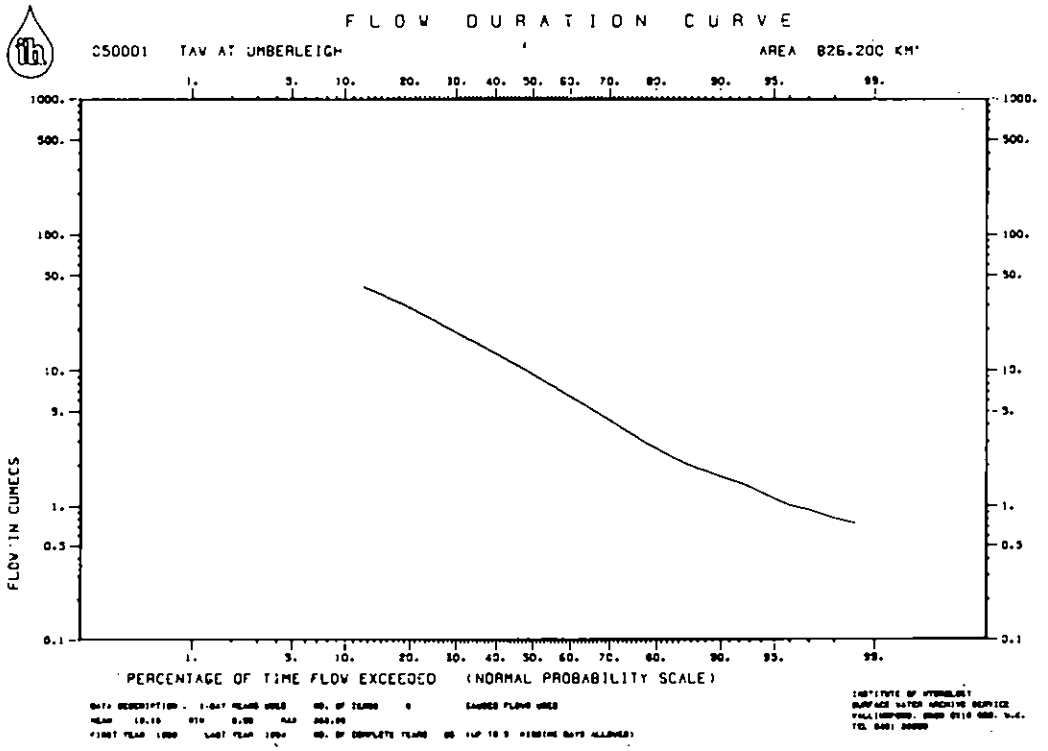
			2	3	4	5	6		8	9
0		112.407	88.953	78.112	70.827	64.442	59.554	56.125	53.098	50.148
10	47.474	44.176	41.967	39.864	37.968	36.202	34.286	32.813	31.533	30.169
20	28.878	27.620	26.450	25.366	24.302	23.328	22.350	21.282	20.533	19.756
30	19.052	18.294	17.592	16.975	16.450	15.836	15.263	14.737	14.189	13.691
40	13.254	12.847	12.340	11.914	11.529	11.129	10.807	10.436	10.088	9.725
50	9.366	9.020	8.678	8.390	8.073	7.801	7.535	7.219	6.945	6.673
60	6.428	6.187	5.971	5.755	5.522	5.313	5.090	4.900	4.691	4.492
70	4.292	4.101	3.916	3.738	3.564	3.398	3.239	3.055	2.915	2.783
80	2.659	2.534	2.418	2.287	2.178	2.071	1.976	1.890	1.822	1.734
90	1.647	1.567	1.493	1.391	1.268	1.141	1.019	0.941	0.808	0.685

MAX FLOW= 383.800 MIN FLOW= 0.200 MEAN FLOW= 18.160 CATCHMENT AREA 826.2 SQ.KM

NUMBER OF ZEROS= 0 NUMBER OF VALUES USED= 9497

FIRST YEAR USED= 1959 LAST YEAR USED= 1984
NUMBER OF YEARS USED= 26

ONLY YEARS CONTAINING NOT MORE THAN 5 MISSING DAYS USED



OPTION 13 TABLE OF GAUGING STATION REFERENCE INFORMATION

NUMBER	RIVER	STATION	GRID REF	OPERATION	RECORD 1ST YEAR	RECORD LAST YEAR	STN TYPE	BASIN AREA SQ KM	LEVEL STN AOD	MAT ALT AOD	ABSTRACTIONS & RETURNS	FW
048001	Fowey	Trekelvesteps	SX227599	NRA-SW	1969		CC	36.8	187.7	420	SRP6	
048002	Fowey	Restormel one	SX126611	NRA-SW	1961	1972	VA	171.2	5.8	625	SRP FI	
048003	Fal	Tregony	SW921647	NRA-SW	1972		FLVA	47.0	6.9	226	GFI	
048004	Marleggan	Trengoffe	SX159676	NRA-SW	1969		CC	25.1	70.1	304	G	
048005	Kenwyn	Truro	SW823452	NRA-SW	1948		CC	59.1	-7.2	252	G	
048006	Cober	Helston	SW654273	NRA-SW	1964		VA	60.1	6.7	251	PG I	
048007	Kennall	Penponds	SW752377	NRA-SW	1968		C	28.8	13.6	251	SRPG I,	
048008	St Austell	Pellingey	SX009749	NRA-SW	1971	1976	FL	29.9	11.5	153	G I	
048009	St Neot	Craigshill Wood	SX154662	NRA-SW	1971		CC	22.7	70.5	339	GC	
048010	Seaton	Trehrounbridge	SX295596	NRA-SW	1972		CC	34.1	24.6	349	G I	
048011	Fowey	Restormel	SX097606	NRA-SW	1961		CC	169.1	9.2	623	SRPGEI	

OPTION 14 TABLE OF HYDROMETRIC STATISTICS

STATION NUMBER	TERM	AMP 1941 1970 MM	AREAL RAIN FALL MM	ANNUAL GAUGED RUNOFF MM	MEAN GAUGED FLOW CU M/S	NO. YRS REC	%POR MEAN FLOW	HIGHEST DAILY MEAN CU M/S	DATE	LOWEST DAILY MEAN CU M/S	DATE	%0 %ILE CU M/S	50 %ILE CU M/S	95 %ILE CU M/S
021005	POR	1320	1250	878	7.99	15		185.50	30/01/74	1.19	07/10/72	16.40	5.39	1.97
	1977		1436	829	9.80		123	92.38	31/10	1.39	22/08	20.26	7.03	1.65
	1978		1317	757	8.95		112	75.76	15/11	1.75	19/06	20.23	6.03	2.25
	1979		1387	913	10.80		135	82.15	26/11	2.23	23/07	24.29	8.77	2.63
	1980		1258	793	9.38		117	59.29	24/11	2.01	01/08	19.96	7.05	2.19
021006	POR	1227	1180	694	32.99	15		393.40	30/01/74	3.46	07/10/72	68.79	22.22	6.23
	1977		1277	845	40.20		122	555.30	31/10	4.13	18/08	84.42	29.40	5.44
	1978		1244	731	34.77		105	320.30	15/11	5.67	20/06	78.17	22.26	7.01
	1979		1290	881	41.90		127	262.70	26/11	7.21	23/07	93.82	27.64	8.51
	1980		1187	746	35.48		108	171.80	20/11	6.57	19/05	74.83	24.91	7.46
21007	POR	1413	1321	878	13.69	15		209.80	30/01/74	0.57	07/09/76	31.59	8.50	1.71
	1977		1524	1108	17.54		126	286.30	31/10	0.87	18/08	41.40	10.84	1.11
	1978		1394	886	14.02		101	210.80	15/11	0.97	19/07	32.66	8.24	1.21
	1979		1520	1105	17.48		126	120.90	26/11	1.42	24/07	41.36	10.83	1.83
	1980		1366	944	14.93		107	98.07	20/11	1.18	19/05	35.27	9.16	1.55
021008	POR	1006	949	564	17.74	16		308.66	06/03/83	1.71	22/08/76	38.44	11.05	2.89
	1977		1019	604	21.25		120	187.20	31/10	1.99	17/08	44.36	14.61	2.58
	1978		1008	541	19.03		107	177.90	15/11	2.04	20/07	43.34	11.09	2.53
	1979		1005	693	24.40		138	273.10	25/11	2.22	05/08	55.84	15.31	3.07
	1980		982	586	20.62		116	122.00	20/11	3.35	03/06	43.55	14.36	4.14

NOTE: This example illustrates only a limited amount of the statistical information that may be output.

OPTION 15 GAUGING STATION AND CATCHMENT DESCRIPTION

48003 Fal at Tregony

Originally a velocity-area station in a formalised trapezoidal channel; augmented by a low flow, side contracted flume 2.8m wide in August 1967. Site not ideal for high flows. Data available from June 1978. Earlier data unreliable due to silting of inlet pipes. Moderate modification to flows owing to industrial abstractions and returns.

Moderate to low relief catchment draining Devonian slates, shales and grits. Upper reaches plateau-like alluvial flats. Traverses the kaolinised St Austell Granite. Low grade agriculture and grazing.

48004 Marleggan at Trengoffe

Three-bay compound Crump profile weir, crest lengths 1.52m and 8.53m (total). Wing walls at 1.67m. Flood banks contain flows up to wing wall height. Overtopped at the highest flows. The only gauged natural catchment on Bodmin Moor.

The upper 70% drains the kaolinised granite of Bodmin Moor. The relief is moderate to steep. The lower 30% traverses metamorphosed Devonian slates. Baseflow high for an upland catchment owing to storage in the granite.

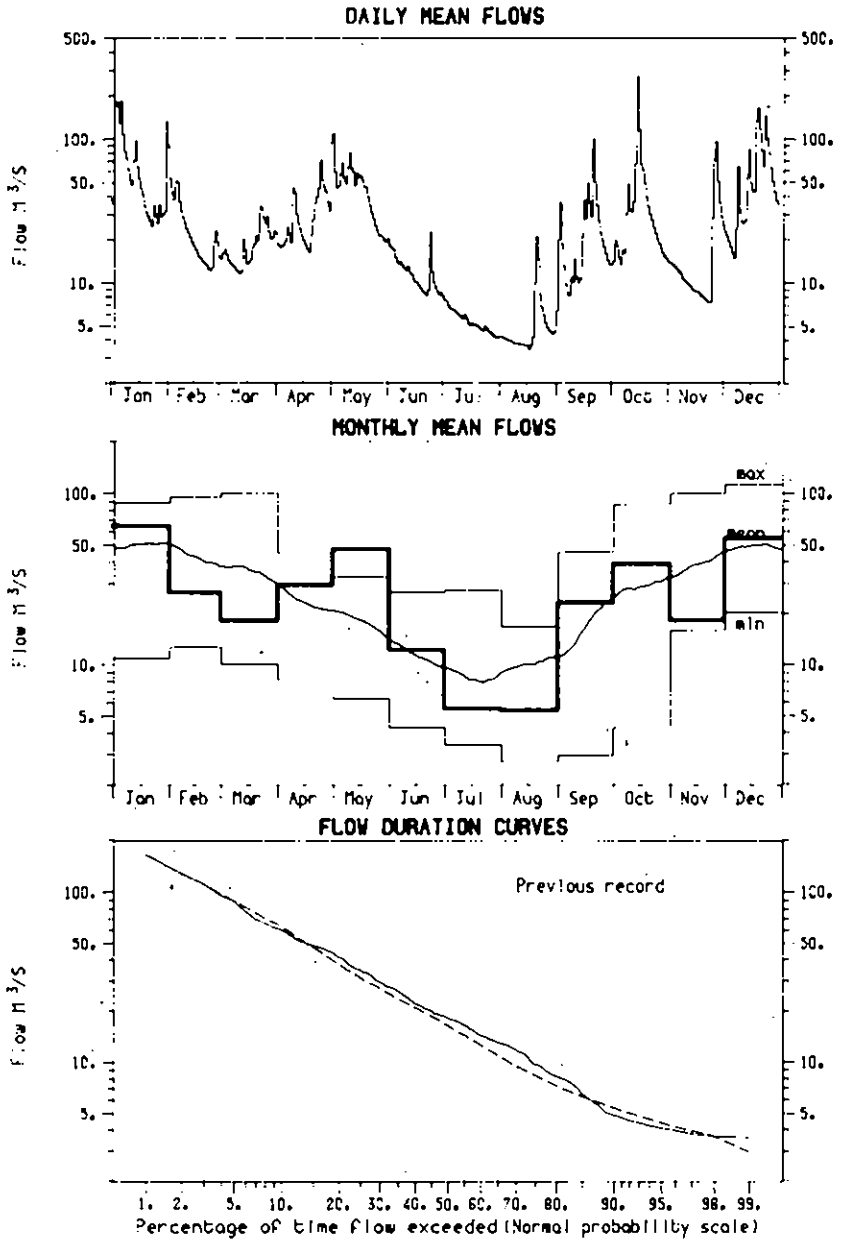
48005 Kenwyn at Truro

Three-bay compound Crump profile weir, crest lengths 1.22m and 3.05 (total). Pier and wing wall height 1.98m. Contains all flows; potential for non-modularity at the highest flows. Variable shoaling affects low flow precision. Substantially natural catchment. High baseflow, low percentage runoff catchment for the relief. Catchment of moderate relief, with wooded, incised valleys. Geology is Devonian grits and shales.

OPTION 16 RIVER FLOW PATTERN PLOTS

56001 USK AT CHAIN BRIDGE 1983

Previous record 1958-1982 Catchment area 911.7km^2



OPTION 17 GAUGING STATION SUMMARY SHEET

Gauging Station Summary

TAW AT UMBERLEIGH

Station Number 050001

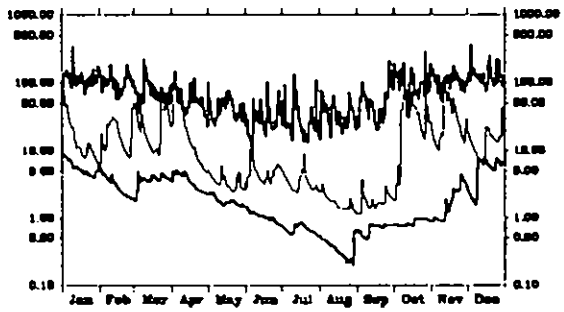
Gauged Flows 1958-1987

Measuring Authority: NRA - South West

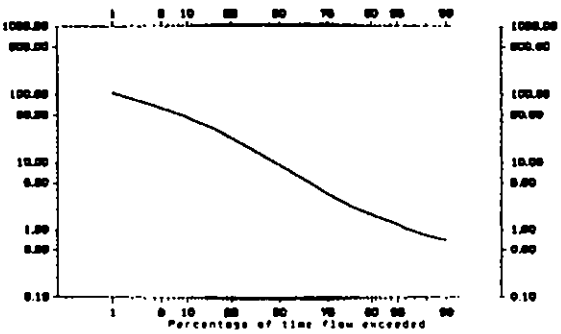
Grid Reference: 21 (SS) 608 237

Daily Flow Hydrograph (m^3s^{-1})

Max. and min. daily mean flows from 1958 to 1987 with an example yearly hydrograph (1987)



Flow Duration Curve (m^3s^{-1})



Flow Statistics

Units: m^3s^{-1} unless otherwise stated

Mean flow	18.06	
Mean flow (ls^{-1}/km^2)	21.85	
Mean flow ($10^6m^3/yr$)	569.9	
Peak flow & date	644.9	4 Dec 1960
Highest daily mean & date	363.8	4 Dec 1960
Lowest daily mean & date	0.200	28 Aug 1976
10 day minimum & end date	0.237	28 Aug 1976
60 day minimum & end date	0.542	10 Sep 1976
10 percentile	46.820	
50 percentile	9.330	
95 percentile	1.219	
Mean annual flood	247.0	
Bankfull flow	170.00	

Catchment Characteristics

Catchment area (km^2)	826.2
Level stn. (mOD)	14.10
Max alt. (mOD)	604
IH Baseflow index	0.42
FSR slope (m/km)	4.80
1941-70 rainfall (mm)	1193
FSR stream freq. (junctions/km^2)	
FSR percentage urban	

Factors Affecting Flow Regime

- Reservoir(s) in catchment.
- Abstraction for public water supply.
- Augmentation from effluent returns.

Rainfall and Runoff

	Rainfall (mm) (1958-1987)						Runoff (mm) (1958-1987)					
	Mean	Max/Yr		Min/Yr			Mean	Max/Yr		Min/Yr		
Jan	129	242	1984	28	1963		116	201	1984	22	1963	
Feb	84	173	1977	3	1986		82	160	1970	10	1959	
Mar	91	183	1981	10	1961		67	149	1981	24	1984	
Apr	71	145	1966	8	1986		46	103	1966	12	1974	
May	78	146	1985	28	1961		31	120	1985	7	1976	
Jun	68	164	1980	10	1975		17	52	1972	4	1984	
Jul	71	152	1965	25	1976		15	76	1960	3	1984	
Aug	87	160	1985	24	1985		19	62	1985	1	1976	
Sep	92	247	1974	14	1959		24	150	1974	3	1959	
Oct	116	278	1960	14	1978		62	291	1960	3	1978	
Nov	130	259	1963	56	1961		92	184	1963	11	1978	
Dec	139	271	1965	41	1965		119	239	1965	43	1963	
Annual	1151	1525	1960	893	1975		689	1055	1960	432	1964	

Station and Catchment Description

Velocity-area station, main channel 34m wide, cableway span 54.9m. Rock step d/s forms the control. Bypassing begins at about 3.7m on the rb, but a good rating accommodates this. Significant modification to flows owing to PHS abstraction. Some naturalised flow data available.

Large rural catchment - drains both Dartmoor (granite) to the south and Devonian shales and sandstones of Exmoor to the north. Central area is underlain mainly by Culm shales and sandstones (Carboniferous). Agriculture is conditioned by the grade 3 and 4 soils.

Summary of Archived Data

Gauged Flows and Rainfall

Key:

	All rainfall	Some or no rainfall
All daily, all peaks	A	a
All daily, some peaks	B	b
All daily, no peaks	C	c
Some daily, all peaks	D	d
Some daily, some peaks	E	e
Some daily, no peaks	F	f
No gauged flow data	-	

	01234 56789
1950s	----- ---aA
1960s	AAAAA AAAAA
1970s	AAAAA AAAAA
1980s	AAAAA AAA

Naturalised Flows

Key:

All daily, all monthly	A
All daily, some monthly	B
All daily, no monthly	C
Some daily, all monthly	D
Some daily, some monthly	E
Some daily, no monthly	F
No naturalised flow data	-

	01234 56789
1950s	----- ---DA
1960s	AAAAA AAAAA
1970s	AAAAA AAAAA
1980s	AAAAA AAAD

Institute of Hydrology (Surface Water Archive Service) Wallingford, Oxon OX10 8BB, UK. Tel. 0491 38800.

29 Mar 1989

Concise Register of Gauging Stations

Station number	River and station name	Grid reference	Authority	Area (sq km)
002001	Helmsdale at Kilphedir	2997 9181	HRPB	551 4
003001 *	Shin at Lairg	2581 9062	SE	494 6
003002	Carron at Sgodachail	2490 8921	HRPB	241 1
003003	Oykel at Easter Turnaig	2403 9001	HRPB	330 7
003004	Cassley at Rosehall	2472 9022	HRPB	187 5
003005	Shin at Inveran	2574 8974	HRPB	575 0
004001	Conon at Moy Bridge	2482 8547	HRPB	961 8
004003	Alness at Alness	2654 8695	HRPB	201 0
004004	Blackwater at Contin	2455 8563	HRPB	336 7
004005	Meig at Glenmeanne	2288 8528	HRPB	120 5
004006	Bran at Dosmuchetan	2205 8602	HRPB	116 1
005001 *	Beauly at Erchless	2426 8405	SE	849 5
005002	Farrar at Struy	2390 8405	HRPB	311 3
005003	Glass at Kerrow Wood	2354 8321	HRPB	481 8
006001 *	Ness at Ness Castle Farm	2639 8410	SE	1792 3
006003 *	Moriston at Invermoriston	2416 8169	SE	391 0
006006 *	Allt Bhlaradh at Invermoriston	2377 8168	SE	27 5
006007	Ness at Ness Side	2645 8427	HRPB	1839 1
006008	Enrick at Mill of Tore	2450 8300	HRPB	105 9
007001	Findhorn at Shenachie	2826 8337	HRPB	415 6
007002	Findhorn at Forres	3018 8583	HRPB	781 9
007003	Lossie at Sheriffmills	3194 8626	NERPB	216 0
007004	Nairn at Firhall	2882 8551	HRPB	313 0
007005	Dinne at Dunphail	3005 8480	HRPB	165 0
007006	Lossie at Torwinny	3135 8489	NERPB	20 0
008001 *	Spey at Aberlour	3278 8439	NERPB	2654 7
008002	Spey at Kinrara	2881 8082	NERPB	1011 7
008003 *	Spey at Ruthven Bridge	2759 7996	NERPB	533 8
008004	Avon at Delnashaugh	3186 8352	NERPB	542 8
008005	Spey at Boat of Garten	2946 8191	NERPB	1267 8
008006	Spey at Boat o Brig	3318 8518	NERPB	2881 2
008007	Spey at Invertruim	2687 7962	NERPB	400 4
008008	Tromie at Tromie Bridge	2789 7995	NERPB	130 3
008009	Dulnain at Balnaan Bridge	2977 8247	NERPB	272 2
008010	Spey at Grantown	3033 8268	NERPB	1748 8
008011	Livet at Minmore	3201 8291	NERPB	104 0
009001	Deveron at Avochie	3532 8464	NERPB	441 6
009002	Deveron at Muiresk	3705 8498	NERPB	954 9
009003	Isla at Grange	3494 8506	NERPB	178 1
009004	Boyne at Redcraig	3519 8373	NERPB	179 0
009005	Allt Deveron at Cabrach	3378 8291	GRWD	67 0
010002	Ugie at Inverugie	4101 8485	NERPB	325 0
010003	Ythan at Ellon	3947 8303	NERPB	523 0
011001	Don at Parkhill	3887 8141	NERPB	1273 0
011002	Don at Haughton	3756 8201	NERPB	787 0
011003	Don at Bridge of Alford	3568 8170	NERPB	499 0
011004	Urie at Pitcaple	372 8260	NERPB	198 0
011005	Don at Mill of Newe	3371 8121	NERPB	187 0
012001	Dee at Woodend	3635 7956	NERPB	1370 0
012002	Dee at Park	3798 7983	NERPB	1844 0
012003	Dee at Polhollick	3344 7965	NERPB	690 0
012004	Girnock Burn at Littlemill	3324 7956	NERPB	30 3
012005	Muick at Invermuick	3364 7947	NERPB	100 0
012006	Gairn at Invergairn	3353 7971	NERPB	150 0
012007	Dee at Mar Lodge	3098 7895	NERPB	289 0
012008	Feugh at Heugh Head	3687 7928	NERPB	229 0
013001	Barvie at Inverbarvie	3826 7733	NERPB	123 0
013002	Luther Water at Luther Bridge	3660 7658	TRPB	138 0
013003 *	South Esk at Stannochy Bridge	3583 7593	TRPB	487 0
013004	Prosen Water at Prosen Bridge	3396 7586	TRPB	104 0
013005	Lunan Water at Kirkton Mill	3655 7494	TRPB	124 0
013007	North Esk at Logie Mill	3699 7640	TRPB	730 0
013008	South Esk at Brechin	3600 7596	TRPB	490 0
013009	West Water at Dalhousie Bridge	3592 7680	TRPB	127 2
013010	Brothock Water at Brothock Bridge	3639 7418	TRPB	50 0
014001	Eden at Kemback	3415 7158	TRPB	307 4
014002	Dighty Water at Balmossie Mill	3477 7324	TRPB	126 9
014005	Motray Water at St Michaels	3441 7224	TRPB	52 0
014006	Monikie Burn at Panbride	3574 7361	TRPB	16 0
014007	Craigmill Burn at Craigmill	3575 7360	TRPB	29 0
015001 *	Isla at Forter	3187 7647	TRWS	70 7
015002 *	Newton Burn at Newton	3230 7605	TRWS	15 4
015003	Tay at Caputh	3082 7395	TRPB	3211 0
015004 *	Inzion at Loch of Lintrathen	3260 7559	TRWS	24 7
015005 *	Melgan at Loch of Lintrathen	3275 7558	TRWS	40 9
015006	Tay at Ballathie	3147 7367	TRPB	4587 1
015007	Tay at Pitnacree	2924 7534	TRPB	1149 4
015008	Dean Water at Cookston	3340 7479	TRPB	177 1
015010	Isla at Wester Cardean	3295 7468	TRPB	368 5
015011	Lyon at Comrie Bridge	2786 7486	TRPB	391 1
015012	Tummel at Port na Craig	2940 7577	TRPB	1849 0
015013	Almond at Almondbank	3067 7258	TRPB	174 8
015014	Ardle at Kindrogan	3056 7631	TRPB	103 0
015015	Almond at Newton Bridge	2888 7316	TRPB	84 0
015016	Tay at Kenmore	2787 7487	TRPB	600 9
015017 *	Braan at Ballinloan	2979 7408	TRPB	197 0
015018 *	Lyon at Moer	2534 7448	SE	181 4
015021	Lunan Burn at Mill Bank	3182 7400	TRPB	94 0
015023	Braan at Hermitage	3014 7422	TRPB	210 0
015024	Dochart at Killin	2567 7320	TRPB	239 0
015025	Ericht at Creghall	3174 7472	TRPB	432 0
015027	Garry Burn at Loakmill	3075 7339	TRPB	20 0
015028	Ordie Burn at Luncarty	3093 7306	TRPB	54 0
016001	Earn at Kinkell Bridge	2933 7167	TRPB	580 5
016002 *	Earn at Abernethy	2754 7216	TRPB	176 9
016003	Ruchill Water at Cultybraggan	2764 7204	TRPB	99 5
016004	Farm at Fortevoit Bridge	3043 7184	TRPB	782 2
016006	Dunning Burn at Granco	3019 7147	TRPB	1208 0
017001	Carron at Headswood	2832 6820	FRPB	122 3
017002	Leven at Leven	3369 7006	FRPB	424 0
017003	Bonny Water at Bonnybridge	2824 6804	FRPB	50 5
017004	Ore at Balfour Mains	3330 6997	FRPB	162 0
017005	Avon at Polmonthill	2952 6797	FRPB	195 3
017008	South Queich at Kinross	3122 7015	FRPB	33 7
017012	Red Burn at Castlecary	2788 6780	FRPB	22 0
017016	Lochty Burn at Whinnyhall	3221 6987	FRPB	14 0
017017 *	Greens Burn at Killyford Bridge	3150 7053	FRPB	7 9
018001 *	Allan Water at Kinbuck	2792 7053	FRPB	181 0
018002	Devon at Glenochil	2858 6960	FRPB	181 0
018003	Teith at Bridge of Teith	2725 7011	FRPB	518 0
018005	Allan Water at Bridge of Allan	2786 6980	FRPB	210 0
018007	Devon at Fossoway Bridge	3011 7018	FRPB	89 5
018008	Leny at Arne	2585 7096	FRPB	190 0
018010	Forth at Gargunnock	2714 6953	FRPB	397 0
018011	Forth at Craigforth	2775 6955	FRPB	1036 0
018012 *	Ardoch Burn at Doune Castle	2729 7008	FRPB	48 0
018013	Black Devon at Fauld Mill	2914 6924	FRPB	87 0
018014	Bannockburn at Bannock Burn	2812 6908	FRPB	23 7
018016	Kelly Water at Clashmore	2468 6968	FRPB	2 8
018017	Monachyle Burn at Balquhidder	2475 7230	IH	7 7
018018	Kirkton Burn at Balquhidder	2532 7219	IH	8 9
018019	Corner Burn at Corner	2387 7042	FRPB	0 9
019001	Almond at Cregeneil	3165 6752	FRPB	369 0
019002	Almond at Almond Weir	3004 6652	FRPB	43 8
019003 *	Breich Water at Breich Weir	3014 6639	FRPB	51 8
019004	North Esk at Dalmore Weir	3252 6616	FRPB	81 6
019005	Almond at Almondell	3085 6686	FRPB	229 0
019006	Water of Leith at Murrayfield	3228 6732	FRPB	107 0
019007	Esk at Musselburgh	3339 6723	FRPB	330 0
019008	South Esk at Prestonholm	3325 6623	FRPB	112 0
019010	Braid Burn at Liberton	3273 6707	FRPB	16 2
019011	North Esk at Dalkeith Palace	3333 6678	FRPB	137 0
019012	Water of Leith at Colinton	3212 6688	FRPB	72 0
019014 *	Bros Burn at Newbiggin	3114 6732	FRPB	34 1
019017	Gogar Burn at Turnhouse	3181 6733	FRPB	38 8
020001	Tyne at East Linton	3591 6768	FRPB	307 0
020002	West Peffer Burn at Luffness	3489 6811	FRPB	26 2
020003	Tyne at Spilmersford	3456 6683	FRPB	161 0
020004	East Peffer Burn at Lochhouses	3610 6824	FRPB	31 1
020005	Birns Water at Saltoun Hall	3457 6688	FRPB	93 0
020006	Biel Water at Belton House	3645 6768	FRPB	51 8
020007	Gifford Water at Lennoxlove	3511 6717	FRPB	64 0
020008 *	Bros Burn at Broxmouth	3697 6776	FRPB	19 7
021001 *	Fruid Water at Fruid	3088 6205	LRWD	23 7
021002 *	Whiteadder Water at Hungry Snout	3663 6633	LRWD	45 6
021003	Tweed at Peebles	3257 6400	TWRP	694 0
021004 *	Watch Water at Watch Water Reservoir	3664 6566	BRWD	10 7
021005	Tweed at Lyne Ford	3206 6397	TWRP	373 0
021006	Tweed at Boleside *	3498 6334	TWRP	1500 0
021007	Ettrick Water at Lindean	3486 6315	TWRP	499 0
021008	Teviot at Ormiston Mill	3702 6280	TWRP	1110 0
021009	Tweed at Norham	3898 6477	TWRP	4390 0
021010 *	Tweed at Dryburgh	3588 6320	TWRP	2080 0
021011	Yarrow Water at Philphaugh	3439 6277	TWRP	231 0
021012 *	Teviot at Hawick	3522 6159	TWRP	323 0
021013	Gala Water at Galashiels	3479 6374	TWRP	207 0
021014	Tweed at Kingledores	3109 6285	TWRP	139 0
021015	Leader Water at Earlston	3565 6388	TWRP	239 0
021016	Eye Water at Evemouth Mill	3942 6635	TWRP	119 0
021017	Ettrick Water at Brockhopeng	3234 6132	TWRP	37 5
021018	Lyne Water at Lyne Station	3209 6401	TWRP	175 0
021019	Manor Water at Cademuir	327 6369	TWRP	61 6
021020	Yarrow Water at Gordon Arms	3309 6247	TWRP	155 0
021021	Tweed at Sprouston	3752 6354	TWRP	3330 0
021022	Whiteadder Water at Hutton Castle	3881 6550	TWRP	503 0
021023	Leet Water at Coldstream	3839 6396	TWRP	113 0
021024	Jed Water at Jedburgh	3655 6214	TWRP	139 0
021025	Ale Water at Ancrum	3834 6244	TWRP	174 0
021026	Time Water at Deephope	3278 6138	TWRP	31 0
021027	Blackadder Water at Mouth Bridge	3826 6530	TWRP	159 0
021030	Meggat Water at Henderland	323 6232	TWRP	56 2
021031 *	Till at Etal	3927 6396	NRA N	648 0
021032	Glen at Kirknewton	3919 6310	NRA N	198 9
021034	Yarrow Water at Craig Douglas	3288 6244	TWRP	116 0
022001	Coquet at Morwick	4234 6044	NRA N	569 8
022002 *	Coquet at Bygate	3870 6083	NRA N	59 5
022003 *	Usway Burn at Shillmoor	3886 6077	NRA N	21 4
022004 *	Aln at Hawkhill	4211 6129	NRA N	205 0
022006	Blyth at Hartford Bridge	4243 5800	NRA N	269 4
022007	Wansbeck at Mitford	4175 5858	NRA N	287 3
022008 *	Alwin at Clennell	3925 6063	NRA N	27 7
022009	Coquet at Rothbury	4087 6016	NRA N	346 0
023001	Tyne at Bywell	4038 5817	NRA N	2175 6
023002	Derwent at Eddys Bridge	4041 5506	NRA N	118 0
023003	North Tyne at Reaverhill	3906 5732	NRA N	1007 5
023004	South Tyne at Haydon Bridge	3856 5647	NRA N	751 1
023005 *	North Tyne at Tarset	3776 5861	NRA N	284 9
023006	South Tyne at Featherstone	3672 5811	NRA N	321 9
023007	Derwent at Rowlands Gill	4168 5581	NRA N	242 1
023008	Rede at Rede Bridge	3868 5832	NRA N	343 8
023009 *	South Tyne at Alston	3716 5465	NRA N	118 5
023010 *	Tarset Burn at Greenhaugh	3789 5879	NRA N	96 0
023011	Kielder Burn at Kielder	3644 5946	NRA N	58 8
023012 *	East Allen at Wide Eals	3802 5583	NRA N	88 0
023013 *	West Allen at Hindley Wrae	3791 5583	NRA N	75 1
023014 *	North Tyne at Kielder temporary	3631 5931	NRA N	27 0
023015 *	North Tyne at Berrastord	3924 5721	NGWC	1043 8
023016	Ouse Burn at Crag Hall	4254 5674	NRA N	55 0
023022	North Tyne at Ughyclub	3712 5875	NRA N	241 5
023023	Tyne at Riding Mill	4026 5619	NRA N	2174 5
024001	Wear at Sunderland Bridge	4264 5376	NRA N	657 8
024002 *	Gaunless at Bishop Auckland	4215 5306	NRA N	93 0
024003	Wear at Stanhope	3984 5391	NRA N	171 9
024004	Bedburn Beck at Bedburn	4118 5322	NRA N	74 9
024005	Browney at Burn Hall	4259 5387	NRA N	178 5
024006 *	Rookhope Burn at Eastgate	3952 5390	NRA N	36 5
024007 *	Browney at Lanchester	4165 5462	NRA N	44 6
024008	Wear at Witton Park	4174 5309	NRA N	455 0
024009	Wear at Chester le Street	4283 5512	NRA N	1008 3
025001	Tees at Broken Scar	4259 5137	NRA N	818 4
025002 *	Tees at Dent Bank	3932 5260	NRA N	217 3
025003 *	Trout Beck at Moor House	3759 5336	NRA N	11 4
025004	Skerne at South Park	4284 5129	NRA N	250 1
025005	Leven at Leven Bridge	4445 5122	NRA N	196 3
025006	Greta at Rutherford Bridge	4034 5122	NRA N	86 1

Station number	River and station name	Grid reference	Authority	Area (sq km)
025007 *	Clow Beck at Croft	4282 5101	NRA·N	78 2
025008	Tees at Barnard Castle	4047 5166	NRA·N	509 2
025009	Tees at Low Moor	4364 5105	NRA·N	1264 0
025010 *	Baydale Beck at Mowden Bridge	4280 5156	NRA·N	31 1
025011 *	Langdon Beck at Langdon	3852 5309	NRA·N	13 0
025012	Harwood Beck at Harwood	3849 5309	NRA·N	25 1
025013 *	Billingham Beck at Thorpe Thewles	4408 5237	NRA·N	61 4
025014 *	Mordon Sten at Mordon School	4323 5274	NRA·N	2 5
025015 *	Woodham Burn at South Farm	4285 5283	NRA·N	29 1
025018	Tees at Middleton in Teesdale	3950 5250	NRA·N	242 1
025019	Leven at Easby	4585 5087	NRA·N	14 8
025020	Skerne at Preston le Skerne	4292 5238	NRA·N	147 0
025021	Skerne at Bradbury	4318 5285	NRA·N	70 1
025022 *	Balder at Baldermead Reservoir	3931 5187	NRA·N	20 4
025024 *	Chapel Beck at Gilsborough	4599 5163	NRA·N	13 4
026001 *	West Beck at Wansford Bridge	5064 4560	NYW	192 0
026002	Hull at Hempholme Lock	5080 4498	NRA·Y	378 1
026003	Foston Beck at Foston Mill	5093 4548	NRA·Y	57 2
026004 *	Gypsey Race at Bridlington	5165 4675	NRA·Y	253 8
026005	Gypsey Race at Boynton	5137 4677	NRA·Y	240 0
026006	Elmswell Beck at Little Driffield	5009 4575	NRA·Y	138 0
026007 *	Catchwater at Wilberwick	5171 4403	NRA·Y	15 5
026008	Mires Beck at North Cave	4890 4316	NRA·Y	
026009	West Beck at Snakeholme Lock	5066 4555	NRA·Y	
026010	Driffield Canal at Snakeholme Lock	5068 4555	NRA·Y	
027001	Nidd at Hunsingore Weir	4428 4530	NRA·Y	484 3
027002	Wharfe at Flint Mill Weir	4422 4473	NRA·Y	758 9
027003	Aire at Beal Weir	4534 4255	NRA·Y	1932 1
027004 *	Calder at Newlands	4385 4220	NRA·Y	899 0
027006	Don at Hadfields Weir	4390 3910	NRA·Y	373 0
027007	Ure at Westwick Lock	4358 4671	NRA·Y	914 8
027008 *	Swale at Leckby Grange	4415 4748	NRA·Y	1345 6
027009	Ouse at Skelton	4568 4554	NRA·Y	3315 0
027010 *	Hodge Beck at Bransdale Weir	4827 4944	NRA·Y	18 9
027012 *	Hebden Water at High Greenwood	3973 4309	NRA·Y	36 0
027013 *	Ewden Beck at More Hall Reservoir	4289 3957	NRA·Y	26 4
027014 *	Rye at Little Habton	4743 4771	NRA·Y	679 0
027015 *	Derwent at Stamford Bridge	4714 4557	NRA·Y	1634 3
027018 *	Ryburn at Ryburn Reservoir	4025 4187	NRA·Y	10 7
027019 *	Booth Dean Clough at Booth Wood Mill	4033 4166	NRA·Y	15 9
027021 *	Don at Doncaster	4589 4040	NRA·Y	1256 2
027022 *	Don at Rotherham Weir	4427 3928	NRA·Y	826 0
027023	Dearne at Barnsley Weir	4350 4073	NRA·Y	118 9
027024 *	Swale at Richmond	4146 5006	NRA·Y	381 0
027025	Rother at Woodhouse Mill	4432 3857	NRA·Y	352 2
027026	Rother at Whittington	4394 3744	NRA·Y	165 0
027027 *	Wharfe at Ilkley	4112 4481	NRA·Y	443 0
027028	Aire at Armley	4281 4340	NRA·Y	691 5
027029	Calder at Elland	4124 4219	NRA·Y	341 9
027030	Dearne at Adwick	4477 4020	NRA·Y	310 8
027031	Colne at Colne Bridge	4174 4199	NRA·Y	245 0
027032	Hebden Beck at Hebden	4025 4643	NRA·Y	22 2
027033	Sea Cut at Scarborough	5028 4908	NRA·Y	33 7
027034	Ure at Kilgram Bridge	4190 4860	NRA·Y	510 2
027035	Aire at Kildwick Bridge	4013 4457	NRA·Y	282 3
027036 *	Derwent at Malton	4789 4715	NRA·Y	1421 0
027038	Coate Beck at Gatehouses	4774 4836	NRA·Y	7 8
027040	Doe Lee at Staveley	4443 3746	NRA·Y	67 9
027041	Derwent at Buttercrambe	4731 4587	NRA·Y	1586 0
027042	Dove at Kirkby Mills	4705 4855	NRA·Y	59 2
027043	Wharfe at Addingham	4092 4494	NRA·Y	427 0
027044	Blackfoss Beck at Sandhills Bridge	4725 4475	NRA·Y	47 0
027047	Sneaton Beck at Low Houses	3833 4883	NRA·Y	10 2
027048	Derwent at West Ayton	4989 4850	NRA·Y	127 0
027049	Rye at Ness	4696 4791	NRA·Y	238 7
027050	Esk at Sleights	4855 5081	NRA·Y	308 0
027051	Crimple at Burn Bridge	4284 4519	NRA·Y	8 1
027052	Whitting at Sheepbridge	4376 3747	NRA·Y	50 2
027053	Nidd at Birstwith	4230 4603	NRA·Y	217 6
027054	Hodge Beck at Cherry Farm	4652 4902	NRA·Y	37 1
027055	Rye at Broadway Foot	4580 4883	NRA·Y	131 7
027056	Pickering Beck at Ings Bridge	4791 4819	NRA·Y	68 6
027057	Seven at Normanby	4736 4821	NRA·Y	121 8
027058	Recal at Crook House Farm	4661 4810	NRA·Y	57 6
027059	Laver at Ripon	4301 4710	NRA·Y	87 5
027060	Kyle at Newton On Ouse	4509 4602	NRA·Y	167 6
027061	Colne at Longroyd Bridge	4136 4161	NRA·Y	72 3
027062	Nidd at Skip Bridge	4482 4561	NRA·Y	516 0
027064	Went at Walden Stubbs	4551 4163	NRA·Y	83 7
027065	Holme at Queens Mill	4142 4157	NRA·Y	97 4
027066	Blackburn Brook at Ashlowes	4393 3914	NRA·Y	42 8
027067	Sheaf at Highfield Road	4357 3883	NRA·Y	49 1
027068	Ryburn at Ripponden	4035 4188	NRA·Y	33 0
027069	Wiske at Kirby Wiske	4375 4844	NRA·Y	215 5
027070	Ellar Beck at Skipton	3984 4502	NRA·Y	35 3
027071	Swale at Crakehill	4425 4734	NRA·Y	1363 0
027072	Worth at Keighley	4064 4408	NRA·Y	71 7
027073	Brompton Beck at Sneaton Inge	4936 4794	NRA·Y	12 9
027074	Spen Beck at Northorpe	4225 4210	NRA·Y	46 3
027075	Bedale Beck at Leeming	4306 4902	NRA·Y	160 3
027076	Batby Beck at Thornton Lock	4780 4444	NRA·Y	103 1
027077	Bradford Beck at Shipley	4151 4375	NRA·Y	58 0
027080	Aire at Fleet Weir	4381 4285	NRA·Y	
027082	Cundall Beck at Bat Bridge	4419 4724	NRA·Y	
027083	Foss at Huntington	4612 4543	NRA·Y	
027084	Eastburn Beck at Crosshills	4021 4452	NRA·Y	43 4
027085	Cod Beck at Dalton Bridge	4422 4766	NRA·Y	209 3
027086	Skell at Alma Weir	4316 4709	NRA·Y	
028001	Derwent at Yorkshire Bridge	4198 3851	NRA·ST	126 0
028002 *	Blithe at Hamstall Ridware	4109 3192	NRA·ST	163 0
028003 *	Tame at Water Orton	4169 2915	NRA·ST	408 0
028004 *	Tame at Lea Marston	4206 2935	NRA·ST	795 0
028005 *	Tame at Elford	4173 3106	NRA·ST	1475 0
028006 *	Trent at Great Haywood	3994 3231	NRA·ST	325 0
028007 *	Trent at Shardlow	4448 3299	NRA·ST	4400 0
028008	Dove at Rocester Weir	4112 3397	NRA·ST	399 0
028009	Trent at Colwick	4620 3399	NRA·ST	7486 0
028010 *	Derwent at St Mary's Bridge	4358 3363	NRA·ST	1054 0
028011	Derwent at Matlock Bath	4296 3588	NRA·ST	690 0
028012	Trent at Yoxall	4131 3177	NRA·ST	1229 0
028013 *	Soar at Zouch	4498 3240	NRA·ST	1289 8
028014 *	Sow at Milford	3975 3215	NRA·ST	591 0
028015	Idle at Mattersey	4690 3895	NRA·ST	529 0
028016 *	Ryton at Serby Park	4641 3897	NRA·ST	231 0
028017 *	Devon at Cotham	4787 3476	NRA·ST	284 0
028018	Dove at Marston on Dove	4235 3288	NRA·ST	883 2
028019	Trent at Drakelow Park	4239 3204	NRA·ST	3072 0
028020 *	Churnet at Rocester	4103 3389	NRA·ST	236 0
028021 *	Derwent at Draycott	4443 3327	NRA·ST	1175 0
028022 *	Trent at North Muskham	4801 3601	NRA·ST	8231 0
028023 *	Wye at Ashford	4182 3696	NRA·ST	154 0
028024	Wreake at Syston Mill	4815 3124	NRA·ST	413 8
028025 *	Sence at Ratcliffe Culey	4321 2998	NRA·ST	169 4
028026	Anker at Polesworth	4263 3034	NRA·ST	388 0
028027 *	Erewash at Stapleford	4482 3364	NRA·ST	182 2
028029 *	Kingston Brook at Kingston Hall	4503 3277	NRA·ST	57 0
028030 *	Black Brook at Oneberrow	4488 3171	NRA·ST	8 4
028031	Manifold at Ilam	4140 3507	NRA·ST	148 5
028032 *	Meden at Church Warsop	4558 3680	NRA·ST	62 8
028033 *	Dove at Hoftineclough	4063 3668	NRA·ST	8 0
028035 *	Leen at Nottingham	4549 3392	NRA·ST	111 0
028036 *	Poulter at Twyford Bridge	4700 3752	NRA·ST	128 2
028038 *	Manifold at Hulme End	4106 3595	NRA·ST	48 0
028039	Rea at Calthorpe Park	4071 2847	NRA·ST	74 0
028040	Trent at Stoke on Trent	3892 3467	NRA·ST	53 2
028041 *	Hamps at Waterhouses	4082 3502	NRA·ST	35 1
028043	Derwent at Chatsworth	4261 3683	NRA·ST	335 0
028044 *	Poulter at Cuckney	4570 3713	NRA·ST	32 2
028045 *	Meden/Maun at Bothamsall/Haughton	4681 3732	NRA·ST	282 8
028046	Dove at Izaak Walton	4146 3509	NRA·ST	83 0
028047 *	Oldcoates Dyke at Blyth	4615 3876	NRA·ST	85 2
028048	Amber at Wingfield Park	4378 3520	NRA·ST	139 0
028049 *	Ryton at Worksop	4575 3794	NRA·ST	77 0
028050 *	Torne at Auckley	4648 4012	NRA·ST	135 5
028052	Sow at Great Bridgford	3883 3270	NRA·ST	183 0
028053 *	Penk at Penkridge	3923 3144	NRA·ST	272 0
028054 *	Sence at Blaby	4586 2985	NRA·ST	133 0
028055 *	Ecclesbourne at Duffield	4320 3447	NRA·ST	50 4
028056	Rothley Brook at Rothley	4580 3121	NRA·ST	84 0
028058 *	Henmore Brook at Ashbourne	4176 3463	NRA·ST	42 0
028059 *	Maun at Mansfield	4548 3623	NRA·ST	28 8
028060 *	Dover Beck at Lowcham	4653 3479	NRA·ST	69 0
028061	Churnet at Basford Bridge	3983 3520	NRA·ST	139 0
028062 *	Trent at Fledborough	4815 3715	NRA·ST	8433 0
028065 *	Trent at Torksey	4827 3780	NRA·ST	8547 0
028066	Cole at Coleshill	4183 2874	NRA·ST	130 0
028067	Derwent at Church Wilne	4438 3316	NRA·ST	1177 5
028070 *	Burbage Brook at Burbage	4259 3804	NRA·ST	9 1
028072 *	Greet at Southwell	4711 3541	NRA·ST	46 2
028073 *	Ashop at Ashop diversion	4171 3896	NRA·ST	42 0
028075 *	Derwent at Slippery Stones	4169 3951	NRA·ST	17 0
028079	Meece at Shallowford	3874 3291	NRA·ST	86 3
028080	Tame at Lea Marston Lakes	4207 2937	NRA·ST	799 0
028081	Tame at Bescot	4012 2958	NRA·ST	169 0
028082	Soar at Littlethorpe	4542 2973	NRA·ST	183 9
028083	Trent at Derlaston	3885 3355	NRA·ST	195 2
028085	Derwent at St Marys Bridge	4355 3368	NRA·ST	1054 0
028086	Sence at South Wigston	4588 2977	NRA·ST	113 0
028091	Ryton at Blyth	4631 3871	NRA·ST	231 0
028093	Soar at Pillings Lock	4565 3182	NRA·ST	1108 4
028094	Blythe at Castle Farm	4213 2888	NRA·ST	183 8
028095	Tame at Hopwas Bridge	4182 3052	NRA·ST	1421.7
028101	Tame at Sheepwash	3974 2918	NRA·ST	27 9
028102	Blythe at Whitacre	4212 2911	NRA·ST	184 3
029001	Weithe Beck at Bingsley	5253 4016	NRA·A	108 3
029002	Great Eau at Claythorpe Mill	5416 3783	NRA·A	77 4
029003	Lud at Louth	5337 3879	NRA·A	55 2
029004	Ancholme at Bishopbridge	5032 3911	NRA·A	54 7
029005	Rase at Bishopbridge	5032 3912	NRA·A	66 8
029009	Ancholme at Toft Newton	5033 3877	NRA·A	27.2
030001	Witham at Claypole Mill	4842 3480	NRA·A	297 9
030002 *	Barlings Eau at Langworth Bridge	5066 3766	NRA·A	210 1
030003	Bain at Fulsby Lock	5241 3611	NRA·A	197.1
030004	Partney Lymn at Partney Mill	5402 3678	NRA·A	61 6
030005 *	Witham at Saltersford total	4927 3335	NRA·A	126 1
030006	Slea at Leasingham Mill	5088 3485	NRA·A	48 4
030011	Bain at Goulceby Bridge	5248 3795	NRA·A	62 5
030012	Stainfield Beck at Stainfield	5127 3739	NRA·A	37 4
030013	Heighington Beck at Heighington	5042 3696	NRA·A	21 2
030014	Ponton Lode at Ponton	5128 3313	NRA·A	11 9
030015	Cringle Brook at Stoke Rochford	4925 3297	NRA·A	50 5
030017	Witham at Colsterworth	4929 3248	NRA·A	51 3
031001	Eye Brook at Eye Brook Reservoir	4853 2941	CDWC	60 1
031002	Glen at Kates Brdg and King St Brdg	5106 3149	NRA·A	341 9
031005	Welland at Tixover	4970 2997	NRA·A	417 0
031006	Gwash at Belmesthorpe	5038 3097	NRA·A	150 0
031007	Welland at Barrowden	4948 2999	NRA·A	411 8
031010	Chater at Fosters Bridge	4981 3030	NRA·A	68 9
031012 *	Tham at Little Bytham	5018 3179	NRA·A	24 8
031016	North Brook at Empingham	4957 3089	NRA·A	36 5
031021	Welland at Ashley	4819 2915	NRA·A	250 7
031023	West Glen at Easton Wood	4965 3258	NRA·A	4 4
031025	Gwash South Arm at Manton	4875 3051	NRA·A	24 5
031026	Egleton Brook at Egleton	4878 3073	NRA·A	2 5
031028	Gwash at Church Bridge	4951 3082	NRA·A	78 5
032001	Nene at Oston	5168 2972	NRA·A	1834 3
032002	Willow Brook at Fotheringhay	5067 2933	NRA·A	89 8
032003	Harpers Brook at Old Mill Bridge	4983 2799	NRA·A	74 3
032004	Ise Brook at Harrowden Old Mill	4898 2715	NRA·A	194 0
032006	Nene/Kislingbury at Upton	4721 2592	NRA·A	223 0
032007	Nene Brampton at St Andrews	4747 2817	NRA·A	232 8
032008	Nene/Kislingbury at Dodford	4627 2607	NRA·A	107 0
032029 *	Flore at Experimental Catchment	4680 2810	NRA·A	7 0
032031	Wootton Brook at Wootton Park	4726 2577	NRA·A	73 9
033001 *	Bedford Ouse at Brownshill Staunch	5369 2727	NRA·A	3030 0
033002	Bedford Ouse at Bedford	5055 2495	NRA·A	1460 0
033003 *	Cam at Bottisham	5508 2657	NRA·A	803 0
033004 *	Lark at Isleham	5648 2760	NRA·A	466 2
033005	Bedford Ouse at Thornborough Mill	4736 2353	NRA·A	388 5
033006	Wissey at Northwold	5771 2965	NRA·A	274 5
033007	Nar at Marham	5723 3119	NRA·A	153 3
033008 *	Little Ouse at Thetford No1 Staunch	5880 2832	NRA·A	699 0
033009	Bedford Ouse at Harrold Mill	4951 2565	NRA·A	1320 0
033011	Little Ouse at County Bridge Euston	5892 2801	NRA·A	128 7
033012	Kym at Meagre Farm	5155 2631	NRA·A	137 5
033013	Sapiston at Rectory Bridge	5896 2791	NRA·A	205 9
033014	Lark at Temple	5758 2730	NRA·A	272 0
033015	Ouzel at Willen	4882 2408	NRA·A	277.1
033016 *	Cam at Jesus Lock	5450 2593	NRA·A	761 5
033018	Tove at Capenham Bridge	4714 2488	NRA·A	138 1

Station number	River and station name	Grid reference	Auth ority	Area (sq km)
033019	Thet at Melford Bridge	5880 2830	NRA-A	316 0
033020	Alconbury Brook at Brampton	5208 2717	NRA A	201 5
033021	Rhee at Burn Mill	5415 2523	NRA-A	303 0
033022	Ivel at Burnham	5153 2509	NRA-A	541 3
033023	Lee Brook at Beck Bridge	5862 2733	NRA-A	101 8
033024	Cam at Dernford	5466 2508	NRA-A	198 0
033025 *	Babraham at West Newton Mill	5696 3256	NRA A	39 6
033026	Bedford Ouse at Offord	5216 2669	NRA-A	2570 0
033027	Rhee at Wimpole	5333 2485	NRA-A	119 1
033028	Flit at Shefford	5143 2393	NRA A	119 6
033029	Stringside at White Bridge	5716 3008	NRA-A	98 8
033030 *	Capstone Brook at Capstone	4933 2255	NRA-A	40 2
033031	Broughton Brook at Broughton	4889 2408	NRA A	66 6
033032	Headham at Headham	5685 3375	NRA-A	59 0
033033	Hiz at Arlesey	5190 2379	NRA-A	108 0
033034	Little Ouse at Abbey Heath	585: 2844	NRA A	699 3
033035	Fly Ouse at Denver Complex	5588 3010	NRA-A	3430 0
033037	Bedford Ouse at Newp't Pagnell Wr	4877 2443	NRA-A	800 0
033039	Bedford Ouse at Roxton	5160 2535	NRA A	1660 0
033040	Rhee at Ashwell	5267 2401	NRA-A	
033044	Thet at Bridgham	5957 2855	NRA-A	277 8
033045	Wittle at Quidenham	6027 2878	NRA A	78 3
033046	Thet at Red Bridge	5996 2923	NRA-A	145 3
033048	Larling Brook at Stonebridge	5928 2907	NRA A	21 4
033049 *	Stanford Water at Buckenham Tofts	5834 2953	NRA-A	43 5
033050	Snail at Fordham	5631 2703	NRA A	60 8
033051	Cam at Chesterford	5505 2426	NRA-A	141 0
033052	Swaffham Lode at Swaffham Bulbeck	5553 2628	NRA-A	36 4
033053 *	Granta at Stapleford	5471 2515	NRA A	114 0
033054	Babraham at Castle Rising	5680 3252	NRA-A	47 7
033055	Granta at Babraham	5510 2504	NRA A	98 7
033056	Quy Water at Lode	5531 2627	NRA-A	76 4
033057	Ouzel at Leighton Buzzard	4917 224'	NRA A	119 0
033058	Ouzel at Bletchley	4883 2322	NRA-A	215 0
033059 *	Cut-off Channel at Tolgate	5729 2757	NRA A	
033060 *	Kings Dike at Stanground	5208 2973	NRA-A	
033062	Garden Brook at Fowlmere twn	5403 2457	NRA A	
033063	Little Ouse at Knettishall	5955 2807	NRA-A	101 0
033064	Whaddon Brook at Whaddon	5359 2466	NRA A	16 0
033065	Hiz at Hitchin	5185 2790	NRA A	6 8
033068	Granta at Linton	5570 2464	NRA-A	59 8
033067	New River at Burwell	5608 2696	NRA A	19 6
033068	Cheney Water at Gatley End	5296 2411.	NRA-A	5 0
034001	Yare at Colney	6182 3082	NRA-A	231 8
034002	Tas at Shotesham	6226 2994	NRA-A	146 5
034003	Bure at Ingworth	6197 3296	NRA A	164 7
034004	Wensum at Costessey Mill	6177 3128	NRA-A	536 1
034005	Tud at Costessey Park	6170 3113	NRA A	73 2
034006	Waveney at Needham Mi'	6229 2811	NRA-A	370 0
034007	Dove at Oakley Park	6174 2772	NRA-A	133 9
034008	Ant at Honing Lock	6331 3270	NRA-A	49 3
034010	Waveney at Billingford Bridge	6168 2782	NRA A	149 4
034011	Wensum at Fakenham	5919 3294	NRA-A	127 1
034012	Burn at Burnham Overy	5842 3428	NRA-A	80 0
034013	Waveney at Ellingham Mill	6384 2917	NRA-A	670 0
034014	Wensum at Swanton Morley Tota	6020 3184	NRA-A	363 0
034018	Stiffkey at Warham All Saints	5944 3414	NRA A	77 1
034019	Bure at Horstead Mill	6267 3194	NRA-A	313 0
035001	Gipping at Constantine Wier	6154 2441	NRA-A	310 8
035002	Debden at Newton Hall	6322 2534	NRA A	163 1
035003	Alde at Farnham	6360 2601	NRA-A	63 9
035004	Ore at Beversham Bridge	6359 2583	NRA-A	54 9
035008	Gipping at Stowmarket	6058 2578	NRA A	128 9
035010	Gipping at Bramford	6127 2465	NRA-A	298 0
035013	Blyth at Horton	6406 2769	NRA-A	92 9
036001	Stour at Stratford St Mary	6042 2340	EWC	844 3
036002	Glem at Glemsford	5846 2472	NRA-A	87 3
036003	Box at Polstead	5985 2378	NRA-A	53 9
036004	Chad Brook at Long Melford	5868 2459	NRA-A	47 4
036005	Brett at Hadleigh	6025 2429	NRA-A	156 0
036006	Stour at Langham	6020 2344	NRA A	578 0
036007	Belchamp Brook at Birchfield Bridge	5848 2421	NRA A	58 6
036008	Stour at Westmill	5827 2463	NRA-A	224 5
036009	Brett at Cockfield	5914 2525	NRA-A	25 7
036010	Bumpstead Brook at Broad Green	5689 2418	NRA-A	28 3
036011	Stour Brook at Sturmer	5696 2441	NRA A	34 5
036012	Stour at Kedington	5708 2450	NRA-A	76 2
036013	Brett at Higham	6032 2354	NRA A	195 0
036015	Stour at Lamarsh	5897 2358	NRA-A	480 7
036016 *	Ramsey at Great Oakley	6206 2288	NRA A	13 9
036017 *	Ely Ouse Outfall at Kirtling Green	568' 2559	NRA-A	
037001	Roding at Redbridge	54'5 1884	NRA-T	303 3
037002	Chelmer at Pushes Lock	5794 2090	NRA A	533 9
037003	Ter at Crabbs Bridge	5786 2107	NRA A	77 8
037004 *	Blackwater at Langford	5836 2092	NRA-A	337 0
037005	Colne at Lexden	5962 2261	NRA-A	238 2
037006	Can at Beech's Mill	5890 2072	NRA-A	228 4
037007	Wid at Writtle	5686 2060	NRA-A	136 3
037008	Chelmer at Springfield	5713 2071	NRA A	190 3
037009	Brain at Guithavon Valley	5818 2147	NRA-A	60 7
037010	Blackwater at Appleford Bridge	5845 2158	NRA-A	247 3
037011	Chelmer at Churchend	5629 2233	NRA-A	72 6
037012	Colne at Poolstreet	5771 2364	NRA-A	65 1
037013	Sandon Brook at Sandon Bridge	5755 2055	NRA A	60 6
037014	Roding at High Ongar	5561 2040	NRA-T	95 1
037015	Gypsey Brook at Chipping Ongar	5548 2035	NRA T	62 2
037016	Pant at Copford Hall	5688 2313	NRA-A	62 5
037017	Blackwater at Stisted	5793 2243	NRA-A	139 2
037018	Ingrebourne at Gaynes Park	5553 1882	NRA T	47 9
037019	Beam at Bretons Farm	5515 1853	NRA T	49 7
037020	Chelmer at Felsted	5670 2193	NRA-A	132 1
037021	Roman at Bounstead Bridge	5985 2205	NRA-A	52 6
037022	Holland Brook at Thorpe-le-Soken	6179 2212	NRA-A	54 9
037024	Colne at Earls Colne	5855 2298	NRA A	154 7
037025 *	Bourne Brook at Pewes Bridge	5822 2276	NRA-A	32 1
037026 *	Tenpenny Brook at Tenpenny Bridge	6079 2207	NRA-A	29 0
037027 *	Tenpenny Brook at Ship House Bridge	6054 2214	NRA A	5 1
037028 *	Bentley Brook at Saltwater Bridge	6109 2193	NRA-A	12 1
037029 *	St Osyth Brook at Main Road Bridge	6134 2159	NRA A	8 0
037030 *	Holland Brook at Cradle Bridge	6171 2217	NRA A	48 6
037031 *	Crouch at Wickford	5748 1934	NRA-A	77 8
037033	Eastwood Brook at Eastwood	5859 1888	NRA A	10 4
037034	Mardyke at Stifford	5596 1806	NRA A	90 7
037036 *	Ely Ouse Outlet at Great Sampford	5648 2351	NRA-A	
037037	Toppesfield Brook at Cornish Hall End	5675 2377	NRA-A	3

Station number	River and station name	Grid reference	Auth ority	Area (sq km)
037038 *	Wid at Margaretting	5672 2000	NRA-A	98 6
037039	Blackwater at Langford (low flows)	5835 2090	NRA A	337 0
038001	Lee at Feildes Weir	5390 2092	NRA T	1036 0
038002 *	Ash at Mardock	5393 2148	NRA-T	78 7
038003	Mimram at Panshanger Park	5282 2133	NRA-T	133 9
038004	Rib at Wadesmill	5360 2174	NRA T	136 5
038005 *	Ash at Easneye	5380 2138	NRA-T	85 2
038006 *	Rib at Herts Training School	5335 2158	NRA-T	148 1
038007	Canons Brook at Elizabeth Way	5431 2104	NRA T	21 4
038011 *	Mimram at Fulling Mill	5225 2169	NRA-T	98 7
038012	Stevenage Brook at Bragbury Park	5274 2211	NRA-T	36 0
038013	Upper Lee at Luton Hoo	5118 2185	NRA T	70 7
038014	Salmon Brook at Edmonton	5343 1937	NRA-T	20 5
038015 *	Intercepting Drain at Enfield	5355 1932	NRA-T	7 4
038016	Stanstead Springs at Mountfitchet	5500 2248	NRA T	20 5
038017	Mimram at Whitwell	5184 2212	NRA-T	39 1
038018	Upper Lee at Water Hall	5299 2099	NRA-T	150 0
038020	Cobbins Brook at Sewardstone Road	5387 1999	NRA T	38 4
038021	Turkey Brook at Albany Park	5359 1985	NRA-T	42 2
038022	Pymmes Brook at Edmonton Silver Street	5340 1925	NRA T	42 6
038024	Small River Lee at Ordnance Road	5370 1988	NRA-T	41 5
038026	Priory Brook at Sheering Hall	5495 2126	NRA T	54 6
038027	Stort at Glen Febe	5393 2093	NRA-T	280 2
038028	Stanstead Brook at Gypsy Lane	5506 2241	NRA-T	25 9
038029	Quin at Griggs Bridge	5397 2248	NRA T	50 4
038030	Beane at Hatcham	5325 2131	NRA-T	175 1
039001	Thames at Kingston	5177 1698	NRA-T	9948 0
039002	Thames at Days Weir	4568 1935	NRA T	3444 7
039003	Wandle at Connollys Mill	5265 1705	NRA T	178 1
039004	Wandle at Beddington Park	5296 1655	NRA T	122 0
039005	Beverley Brook at Wimbledon Common	5216 1717	NRA-T	43 6
039006	Windrush at Newbridge	4402 2019	NRA T	362 6
039007	Blackwater at Swallowfield	4731 1648	NRA-T	354 8
039008	Thames at Eynsham	4445 2087	NRA-T	1616 2
039010	Colne at Denham	5057 1864	NRA-T	743 0
039011	Wey at Tilford	4874 1433	NRA-T	396 3
039012	Hogsmill at Kingston upon Thames	5187 1688	NRA T	69 1
039013	Colne at Berrygrove	5123 1982	NRA-T	352 2
039014	Ver at Hansteads	5151 2016	NRA T	132 0
039015 *	Whitewater at Lodge Farm	4731 1523	NRA-T	44 5
039016	Kennet at Theale	4649 1708	NRA T	1033 4
039017	Ray at Grendon Underwood	4680 2711	NRA-T	18 6
039019	Lambourn at Shaw	4470 1682	NRA-T	234 1
039020	Coln at Bibury	4122 2062	NRA T	106 7
039021	Cherwell at Enslow Mill	4482 2183	NRA-T	551 7
039022	Loddon at Sheepbridge	4720 1652	NRA-T	184 5
039023	Wye at Hedsor	4896 1867	NRA-T	137 3
039025	Enborne at Brimpton	4568 1648	NRA-T	147 6
039026	Cherwell at Banbury	4458 2411	NRA T	199 4
039027	Pang at Pangbourne	4634 1766	NRA-T	170 9
039028	Dun at Hungerford	4321 1685	NRA T	101 3
039029	Tillingbourne at Shalford	5000 1478	NRA-T	59 0
039030	Gade at Croxley Green	5087 1952	NRA-T	184 0
039031 *	Lambourn at Welford	4431 1731	NRA-T	176 0
039032 *	Lambourn at East Shefford	4390 1745	NRA T	154 0
039033	Winterbourne St at Bagnor	4453 1694	NRA-T	49 2
039034	Evenlode at Cassington Mill	4448 2099	NRA T	430 0
039035	Churn at Cerney Wick	4076 1963	NRA-T	124 3
039036	Law Brook at Albury	5045 1468	NRA T	16 0
039037	Kennet at Marlborough	4187 1686	NRA-T	142 0
039038	Thame at Shabbington	4670 2055	NRA-T	443 0
039040	Thames at West Mill Cricklade	4094 1947	NRA T	185 0
039042	Leach at Priory Mill Lechlade	4227 1994	NRA-T	76 9
039043	Kennet at Knighton	4295 1710	NRA T	295 0
039044	Hart at Bramshill House	4755 1593	NRA-T	84 0
039046	Thames at Sutton Courtenay	4516 1946	NRA T	3414 0
039049	Silk Stream at Coneydon Lane	5217 1895	NRA-T	29 0
039051 *	Sor Brook at Adderbury	4475 2346	NRA T	106 4
039052	The Cut at Binfield	4853 1713	NRA-T	50 2
039053	Mole at Horley	5271 1434	NRA-T	89 9
039054	Mole at Gatwick Airport	5260 1399	NRA-T	31 8
039055	Yeading Bk West at Yeading West	5083 1846	NRA-T	17 6
039056	Ravensbourne at Catford Hill	5372 1732	NRA-T	67 8
039057	Crane at Cranford Park	5103 1778	NRA-T	61 7
039058	Pool at Wexford Road	5371 1725	NRA-T	38 3
039061	Letcombe Brook at Letcombe Bassett	4375 1853	NRA T	27
039065	Ewelme Brook at Ewelme	4642 1918	NRA-T	13 4
039068	Mole at Castle Mill	5179 1502	NRA T	316 0
039069	Mole at Kinnersley Manor	5262 1462	NRA-T	142 0
039071	Thames at Ewen	4007 1973	NRA T	63 7
039072	Thames at Royal Windsor Park	4982 1773	NRA-T	7046 0
039073	Churn at Cirencester	4020 2028	NRA-T	84 0
039074	Ampney Brook at Sheepen Bridge	4105 1950	NRA-T	74 4
039075	Marston Meysey Bk at Whelstone Bridge	4128 1964	NRA-T	25 0
039076	Windrush at Worsham	4299 2107	NRA-T	298 0
039077	Og at Marlborough Poulton Fm	4194 1697	NRA-T	59 2
039078	Way(north) at Farnham	4838 1465	NRA T	91 1
039079	Wey at Weybridge	5068 1648	NRA-T	1008 0
039081	Ock at Abbot Gardens	448' 1966	NRA T	234 0
039085 *	Wandle at Wandle Park	5266 1703	NRA T	176
039086	Gatwick Stream at Gatwick Link	5285 1417	NRA-T	33 6
039087	Ray at Water Eaton	4121 1915	NRA T	84 1
039088	Chess at Rickmansworth	5068 1947	NRA-T	105 0
039089	Gade at Bury Mill	5053 2077	NRA T	48 2
039090	Cole at Ingleshem	4208 1970	NRA-T	140 0
039091 *	Misbourne at Quarrendon Mill	4975 1963	NRA-T	66 3
039092	Dollis Brook at Hendon Lane Bridge	5240 1895	NRA T	25 1
039093	Brent at Monks Park	5202 1850	NRA-T	117 6
039094	Crane at Marsh Farm	5154 1734	NRA T	81 0
039095	Ouseley at Manor House Gardens	5394 1748	NRA-T	
039096	Wealdstone Brook at Wembley	5192 1862	NRA-T	21 7
039097	Thames at Buscot	4230 1981	NRA-T	997 0
039098	Pinn at Uxbridge	5062 1870	NRA T	33 3
039099	Ampney Brook at Ampney St Peter	4076 2013	NRA-T	45 3
039100	Swil Brook at Oakley	3997 1927	NRA T	53 3
039101	Aldbourne at Ramsbury	4288 1717	NRA-T	53 1
039102	Misbourne at Denham Lodge	5048 1866	NRA-T	136 0
039103	Kennet at Newbury	4472 1672	NRA T	548 1
039104	Mole at Esher	5130 1653	NRA-T	469 6
039105	Thame at Wheatley	4812 2050	NRA T	533 8
039106	Mole at Leatherhead	5161 1564	NRA-T	371 4
039107	Hogsmill at Ewell	5216 1633	NRA-T	33 7
039108	Churn at Perrott's Brook	4022 2057	NRA T	59 0
039109	Coln at Fossebridge	4080 2112	NRA-T	82 0
039110	Coln at Fairford	4151 2012	NRA-T	130 0
039111 *	Thames at Staines	5034 1713	NRA T	8120 0

Station number	River and station name	Grid reference	Auth-ority	Area (sq km)
040001 *	Medway at Weir Wood Reservoir	5407 1353	SW	26 9
040002 *	Darwell at Darwel Reservoir	5722 1213	SW	9 6
040003	Medway at Teston	5708 1530	NRA-S	1258 1
040004	Rother at Udiam	5773 1245	NRA-S	206 0
040005	Bewl at Stile Bridge	5758 1478	NRA-S	27 1
040006	Bourne at Hadlow	5632 1497	NRA-S	50 3
040007	Medway at Chafford Weir	5517 1405	NRA-S	255 1
040008	Great Stour at Wye	6049 1470	NRA-S	230 0
040009	Tese at Stone Bridge	5718 1399	NRA-S	138 2
040010	Eden at Penshurst	5520 1437	NRA-S	224 3
040011	Great Stour at Horton	6116 1554	NRA-S	345 0
040012	Darent at Hawley	5551 1718	NRA-S	191 4
040013	Darent at Otford	5525 1584	NRA S	100 5
040014	Wingham at Durlock	6276 1676	NRA-S	37.7
040015	White Dra n at Fairbrook Farm	6055 1606	NRA-S	31 8
040016	Cray at Crayford	5511 1746	NRA-S	119 7
040017	Dudwell at Burwash	5679 1240	NRA-S	27 5
040018	Darent at Lullingstone	5530 1643	NRA-S	118 4
040020	Eridge Stream at Hendal Bridge	5522 1367	NRA-S	53 7
040021	Herden Channel at Hopemill Br Sandhurst	5813 1290	NRA-S	32 4
040023	East Stour at South Willesborough	6015 1407	NRA-S	58 6
040024 *	Bartley Mill St at Bartley Mill	5633 1357	NRA-S	25 1
040027	Sarre Penn at Calcott	6174 1625	NRA S	19 4
041001	Nunningham Stream at Tilley Bridge	5662 1129	NRA-S	16 9
041002	Ash Bourne at Hammer Wood Bridge	5684 1141	NRA S	18 4
041003	Cuckmere at Sherman Bridge	5633 1051	NRA-S	134 7
041004	Ouse at Barcombe Mills	5433 1148	NRA-S	395 7
041005	Ouse at Gold Bridge	6429 1214	NRA S	180 9
041006	Uck at Isfield	5459 1190	NRA-S	87 8
041009 *	Rother at Hardham	5034 1178	NRA-S	345 8
041010	Adur W Branch at Hatterell Bridge	6178 1197	NRA-S	109 1
041011	Rother at Iping Mill	4852 1229	NRA-S	154 0
041012	Adur E Branch at Selsham	5219 1190	NRA S	93 3
041013	Huggletts Stream at Henley Bridge	5871 1138	NRA-S	14 2
041014	Arun at Pallingham Quay	5047 1229	NRA-S	379 0
041015	Ems at Westbourne	4755 1074	NRA-S	58 3
041016	Cuckmere at Cowbeech	5611 1150	NRA-S	18 7
041017	Combehaven at Crowhurst	5765 1102	NRA-S	30 6
041018	Kird at Tanyards	5044 1256	NRA-S	68 8
041019	Arun at Alfoldean	5117 1331	NRA S	139 0
041020	Bevern Stream at Clappers Bridge	5423 1181	NRA-S	34 6
041021	Clayhill Stream at Old Ship	5448 1*53	NRA-S	7 1
041022	Lod at Halfway Bridge	4931 1223	NRA-S	52 0
041023	Levant at Greylingwell	4871 1064	NRA S	87 2
041024	Shell Brook at Shell Brook P S	5335 1286	NRA-S	22 6
041025	Loxwood Stream at Drungewick	5080 1309	NRA-S	91 6
041028	Cockhaise Brook at Holywell	5376 1262	NRA-S	38 1
041027	Rother at Princes Marsh	4772 1270	NRA-S	37 2
041028	Chess Stream at Chess Bridge	5217 1173	NRA-S	24 0
041029	Bull at Leslands	5575 1131	NRA-S	40 8
042001	Wallington at North Fareham	4587 1075	NRA-S	111 0
042003	Lymington at Brockenhurst Park	4318 1019	NRA-S	98 9
042004	Test at Broadlands	4354 *188	NRA-S	1040 0
042005	Wallop Brook at Broughton	4311 *330	NRA-S	53 6
042006	Meon at Mislingford	4589 *141	NRA-S	72 8
042007	Alre at Drove Lane Alresford	4574 *326	NRA-S	57 0
042008	Cheriton Stream at Sewards Bridge	4574 1323	NRA-S	75 1
042009	Candover Stream at Borough Bridge	4568 1323	NRA-S	71.2
042010	Itchen at Highbridge + Alibrook	4467 1213	NRA-S	360 0
042011	Hamble at Frog Mill	4523 1149	NRA-S	58 6
042012	Anton at Fullerton	4379 1393	NRA S	185 0
042014	Blackwater at Over	4328 1174	NRA-S	104 7
042015	Dever at Weston Colley	4496 1394	NRA S	52 7
042018 *	Itchen at Easton	4512 1325	NRA-S	238 8
042017	Hermitage at Havant	4711 1067	NRA-S	17 0
042018	Monks Brook at Eastleigh	4443 1179	NRA S	43 3
042020	Tadburn Lake at Romsey	4362 1212	NRA-S	19 0
042021 *	Branch of Test at Nursling	4355 1159	NRA S	1050 0
043001 *	Avon at Ringwood	4142 1054	NRA-W	1649 8
043003	Avon at East Mills	4158 1154	NRA-W	1477 8
043004	Bourne at Leverstock Mill	4157 1304	NRA W	163 6
043005	Avon at Amesbury	4151 1413	NRA-W	323 7
043006	Nadder at Wilton Park	4098 1308	NRA-W	220 6
043007	Stour at Throop Mill	4113 0958	NRA-W	1073 0
043008	Wylye at South Newton	4086 1343	NRA-W	445 4
043009	Stour at Hammoon	3820 1147	NRA-W	523 1
043010	Allen at Loverley Mill	4006 1085	NRA-W	94 0
043011 *	Ebble at Bodenham	4162 1263	NRA-W	109 0
043012	Wylye at Norton Bavent	3909 1428	NRA-W	112 4
043013 *	Mude at Somerford	4184 0936	NRA-W	12 4
043014	East Avon at Upavon	4133 1559	NRA-W	86 2
043015 *	Wylye at Longbridge Deverill	3868 1413	NRA-W	89 0
043017	West Avon at Upavon	4133 1559	NRA-W	76 0
043018	Allen at Walford Mill	4008 1007	NRA-W	176 5
043019	Shreen Water at Colesbrook	3807 1278	NRA-W	29 1
043021	Avon at Knapp Mill	4155 0943	NRA-W	1706 0
044001	Frome at East Stoke total	3866 0887	NRA-W	414 4
044002	Piddle at Baggs Mill	3913 0878	NRA-W	183 1
044003 *	Asker at Bridport	3470 0928	NRA-W	49 1
044004	Frome at Dorchester total	3708 0903	NRA-W	208 0
044006	Sydling Water at Sydling St Nicholas	3632 0897	NRA W	12 4
044008 *	Sth Winterbourne at W'bourne Steepleton	3629 0897	NRA-W	19 9
044009	Wey at Broadwey	3668 0839	NRA-W	7 0
045001	Exe at Thorverton	2938 1018	NRA-SW	600 9
045002	Exe at Stoodleigh	2943 1178	NRA-SW	421 7
045003	Culm at Wood Mill	3021 1058	NRA SW	226 1
045004	Axe at Whitford	3262 0953	NRA-SW	288 5
045005	Otter at Dotton	3087 0885	NRA SW	202 5
045006 *	Ouenne at Enterwell	2919 1356	NRA-SW	20 4
045008	Otter at Fenny Bridges	3115 0988	NRA-SW	104 2
045009	Exe at Pixton	2935 1260	NRA-SW	147 6
045010 *	Haddeo at Hartford	2952 1294	NRA-SW	50 0
045011 *	Barle at Brushford	2927 1258	NRA-SW	128 0
045012 *	Creedy at Cowley	2901 0987	NRA-SW	261 8
046002	Teign at Preston	2856 0746	NRA-SW	380 0
046003	Dart at Austins Bridge	2751 0659	NRA-SW	247 6
046005	East Dart at Bellever	2657 0775	NRA-SW	21 5
046006	Erme at Ermington	2642 0532	NRA-SW	43 5
046007 *	West Dart at Dunnabridge	2643 0742	NRA-SW	47 9
046008 *	Avon at Loddiswell	2719 0476	NRA-SW	102 3
047001	Tamar at Gunnislake	2426 0725	NRA-SW	916 9
047003 *	Tavy at Lopwell	2474 0650	NRA-SW	206 9
047004	Lynher at Pillaton Mill	2389 0626	NRA-SW	135 5
047005 *	Ottery at Warrington Park	2336 0886	NRA-SW	120 7
047006 *	Lyd at Lifton Park	2388 0842	NRA-SW	218 1
047007	Yealm at Puslinch	2574 0511	NRA-SW	54 9
047008	Thrushel at Tinhay	2398 0856	NRA-SW	112.7
047009	Tiddy at Tideford	2343 0595	NRA-SW	37 2
047010	Tamar at Crowford Bridge	2280 0991	NRA-SW	78 7
047011 *	Plym at Cann Wood	2522 0613	NRA-SW	79 2
047013	Withey Brook at Bastreet	2244 0763	NRA-SW	18 2
047014	Walkham at Horrabridge	2513 0699	NRA SW	43 2
047015 *	Tavy at Denham / Ludbrook	2476 0681	NRA-SW	197 3
047016 *	Lumburn at Lumburn Bridge	2459 0731	NRA-SW	20 5
047017 *	Wolf at Combe Park Farm	2419 0898	NRA-SW	31 1
048001	Fowey at Trese vesteps	2227 0698	NRA-SW	36 8
048002 *	Fowey at Restormel one	2108 0613	NRA-SW	171 2
048003	Fal at Tregony	1921 0447	NRA-SW	87 0
048004	Warleggan at Trengotte	2159 0674	NRA-SW	25 3
048005	Kenwyn at Truro	1820 0450	NRA-SW	19 1
048006	Cober at Helston	1654 0273	NRA-SW	40 1
048007	Kennall at Ponsanooth	1782 0377	NRA-SW	26 6
048009 *	St Neot at Craigshill Wood	2184 0662	NRA-SW	22 7
048010	Seaton at Trebrownbridge	2299 0598	NRA SW	38 1
048011	Fowey at Restormel	2098 0624	NRA-SW	169 1
049001	Camel at Denby	2017 0682	NRA-SW	208 8
049002	Hayle at St Erth	1549 0342	NRA-SW	48 9
049003	De Lank at De Lank	2132 0765	NRA-SW	21 7
049004	Gannel at Gwills	1829 0593	NRA SW	41 0
050001	Taw at Umberleigh	2608 1237	NRA-SW	826 2
050002	Torridge at Torrington	2500 1185	NRA-SW	663 0
050004 *	Hole Water at Muxworthy	2705 1373	NRA-SW	5 4
050005	West Okement at Vellake	2557 0903	NRA-SW	13 3
050006	Mole at Woodleigh	2660 1211	NRA-SW	327 5
050007 *	Taw at Taw Bridge	2673 1068	NRA-SW	71 4
051001	Domford Stream at Swell Bridge	3088 1428	NRA-W	75 8
051002 *	Horner Water at West Luccombe	2898 1458	NRA-W	20 8
051003	Washford at Beggearn Huish	3040 1395	NRA-W	36 3
052001 *	Axe at Wookey	3527 1458	NRA-W	18 2
052002 *	Yeo at Sutton Bingham Res	3556 1116	NRA W	30 3
052003	Halse Water at Bishops Hull	3208 1253	NRA-W	87 8
052004	Isle at Ashford Mill	3361 1188	NRA-W	90 1
052005	Tone at Bishops Hull	3208 1250	NRA-W	202 0
052006	Yeo at Pen Mill	3573 1162	NRA-W	213 1
052007	Parrett at Chiseborough	3461 1144	NRA-W	74 8
052008 *	Tone at Clatworthy Reservoir	3044 1313	NRA-W	18 1
052009	Sheppey at Fenny Castle	3498 1439	NRA-W	59 8
052010	Brue at Lovington	3590 1318	NRA-W	135 2
052011	Cary at Somerton	3498 1291	NRA-W	82 4
052014	Tone at Greenham	3078 1202	NRA-W	57 2
052015 *	Land Yeo at Wrexall Bridge	3483 1716	NRA-W	23 3
052016	Currypool Stream at Currypool Farm	3221 1382	NRA-W	15 7
052017 *	Congresbury Yeo at Iwood	3452 1631	NRA-W	66 8
052020 *	Galick Stream at Galick Bridge	3571 1100	NRA W	16 4
053001 *	Avon at Melksham	3903 1641	NRA-W	665 6
053002	Semington Brook at Semington	3907 1605	NRA-W	157 7
053003 *	Avon at Bath St James	3753 1645	NRA-W	1595 0
053004	Chew at Compton Dando	3648 1647	NRA-W	129 5
053005	Midford Brook at Midford	3763 1611	NRA W	147 4
053006	Frome(Bristol) at Frenchay	3637 1772	NRA-W	148 9
053007	Frome(Somerset) at Tellisford	3805 1584	NRA-W	281 6
053008	Avon at Great Somerford	3966 1832	NRA-W	303 0
053009	Wellow Brook at Wellow	3741 1581	NRA-W	72 6
053013	Marden at Stanley	3955 1729	NRA-W	99 2
053017	Boyd at Bitton	3681 1698	NRA-W	48 0
053018	Avon at Bathford	3786 1671	NRA-W	1557 0
053019	Woodbridge Brook at Crab Mill	3949 1886	NRA-W	46 6
053020	Gaure Brook at Rodbourne	3937 1840	NRA-W	28 2
053022 *	Avon at Bath ultrasonic	3738 1651	NRA-W	1605 0
053023	Sherston Avon at Fosseway	3891 1870	NRA-W	89 7
053024	Tetbury Avon at Brokenborough	3914 1893	NRA-W	73 6
053025	Mells at Vallis	3757 1491	NRA-W	119 0
053026	Frome(Bristol) at Frampton Cotterell	3667 1822	NRA-W	78 5
053028	By Brook at Maddehill	3815 1688	NRA-W	102 0
053029	Biss at Trowbridge	3854 1579	NRA-W	
054001	Severn at Bewdley	3782 2762	NRA-ST	4325 0
054002	Avon at Evesham	4040 2438	NRA ST	2210 0
054004	Sowe at Stoneleigh	4332 2731	NRA-ST	262 0
054005	Severn at Montford	3412 3144	NRA-ST	2025 0
054006	Stour at Kidderminster	3829 2768	NRA-ST	324 0
054007	Arrow at Broom	4066 2536	NRA-ST	319 0
054008	Teme at Tenbury	3597 2688	NRA ST	1134 4
054010 *	Stour at Alscot Park	4208 2507	NRA-ST	319 0
054011 *	Salwarpe at Harford Mill	3868 2618	NRA-ST	184 0
054012	Tern at Walcot	3592 3123	NRA ST	852 0
054013 *	Clywedog at Cribyneu	2944 2855	NRA-ST	57 0
054014	Severn at Abermule	3164 2958	NRA-ST	580 0
054015 *	Bow Brook at Besford Bridge	3927 2483	NRA-ST	156 0
054016	Roden at Rodington	3589 3141	NRA-ST	259 0
054017 *	Leadon at Wedderburn Bridge	3777 2234	NRA-ST	293 0
054018	Rea Brook at Hookagate	3468 3092	NRA-ST	178 0
054019	Avon at Stareton	4333 2715	NRA-ST	347 0
054020	Perry at Yeaton	3434 3192	NRA-ST	180 8
054022	Severn at Pyniimon flume	2853 2872	IH	8 7
054023 *	Badsey Brook at Offenham	4083 2449	NRA-ST	95 8
054024	Worfe at Burcote	3747 2953	NRA-ST	258 0
054025	Dulas at Rhos-y-pentref	2950 2824	NRA-ST	52 7
054026 *	Cheil at Slate Mill	3892 2284	NRA-ST	34 5
054027 *	Frome at Ebley Mill	3831 2047	NRA-ST	198 0
054028	Vyrnwy at Llanymynech	3252 3195	NRA-ST	778 0
054029	Teme at Knighsford Bridge	3735 2557	NRA-ST.	1480 0
054032	Severn at Saxons Lode	3863 2390	NRA-ST	6850 0
054034	Dowles Brook at Dowles	3768 2784	NRA-ST	40 8
054036	Isbourne at Hinton on the Green	4023 2408	NRA-ST	90 7
054038	Tanat at Llanyblodwel	3252 3225	NRA-ST	229 0
054040	Meese at Tibberton	3880 3205	NRA-ST	167 8
054041	Tern at Eaton On Tern	3649 3230	NRA-ST	192 0
054042 *	Clywedog at Clywedog Dm Lower Wer	2914 2887	NRA-ST	49 0
054043 *	Severn at Upton On Severn	3863 2399	NRA-ST	6850 0
054044	Tern at Ternhill	3629 3316	NRA-ST	92 8
054045 *	Perry at Perry Farm	3347 3303	NRA-ST	49 1
054046 *	Worfe at Cosford	3781 3046	NRA-ST	54 9
054047 *	Perry at Ruyton Bridge	3403 3223	NRA-ST	155 0
054048	Dene at Wellesbourne	4273 2556	NRA-ST	102 0

Station number	River and station name	Grid reference	Auth ority	Area (sq km)
054049	Leam at Princes Drive Weir	4307 2654	NRA ST	362 0
054050	Leam at Eathorpe	4388 2688	NRA ST	300 0
054052 *	Bailey Brook at Tamhill	3829 3316	NRA ST	34 4
054055 *	Ree at Nean Sollars	3664 2724	NRA ST	129 0
054056 *	Clun at Clungunford	3393 2786	NRA ST	195 0
054057	Severn at Haw Bridge	3844 2279	NRA ST	9895 0
054058 *	Stoke Park Brook at Stoke Park	3644 3260	NRA ST	14 3
054059 *	Alford Brook at Alford	3854 3223	NRA ST	10 2
054060 *	Potford Brook at Potford	3634 3220	NRA ST	25 0
054061 *	Hodnet Brook at Hodnet	3628 3288	NRA ST	5 1
054062 *	Stoke Brook at Stoke	3637 3280	NRA ST	13 7
054063 *	Stour at Prestwood Hospital	3865 2858	NRA ST	89 9
054065 *	Roden at Stanton	3585 3241	NRA ST	210 0
054066 *	Platt Brook at Platt	3628 3229	NRA ST	15 7
054067 *	Smestow Brook at Swindon	3861 2906	NRA ST	81 3
054068 *	Tetchill Brook at Hordley	3379 3288	NRA ST	21 2
054069 *	Springs Brook at Lower Hordley	3387 3297	NRA ST	10 4
054070 *	War Brook at Watford	3432 3198	NRA ST	22 5
054080 *	Severn at Dolwen	2996 2851	NRA ST	187 0
054081 *	Clywedog at Bryntail	2913 2868	NRA ST	49 0
054083 *	Crow Brook at Horton	3678 3141	NRA ST	16 7
054084 *	Cannop Brook at Parkend	3616 2075	NRA ST	31 5
054085 *	Cannop Brook at Cannop Cross	3609 2115	NRA ST	10 4
054086 *	Cowmoy Diversion at Cowmoy Weir	2999 3179	NRA ST	13 2
054087 *	Aldord Brook at Childs Ercall	3667 3228	NRA ST	4 7
054088 *	Little Avon at Berkeley Kennels	3683 1988	NRA W	134 0
054089 *	Avon at Bredon	3921 2374	NRA ST	2674 0
054090 *	Tanllwyth at Tanllwyth Flume	2843 2876	IH	0 9
054091 *	Severn at Hafren Flume	2843 2878	IH	3 6
054092 *	Hore at Hore Flume	2846 2873	IH	3 2
054094 *	Strine at Crudgington	3640 3175	NRA ST	134 0
054095 *	Severn at Buildwas	3644 3044	NRA ST	3717 0
054098 *	Hadly Brook at Wards Bridge	3870 2831	NRA ST	53 4
055002 *	Wye at Belmont	3485 2388	NRA WLL	1895 9
055003 *	Lugg at Lugwardine	3548 2405	NRA WEL	885 8
055004 *	Irfon at Abermant	2892 2460	NRA WEL	72 8
055005 *	Wye at Rhayader	2969 2676	NRA WEL	166 8
055006 *	Elan at Caban Coch Reservoir	2926 2645	NRA WEL	184 0
055007 *	Wye at Erwood	3076 2445	NRA WEL	1282 1
055008 *	Wye at Cefn Brwyn	2829 2838	IH	10 6
055009 *	Monnow at Kentchurch	3419 2251	NRA WEL	357 4
055010 *	Wye at Pant Mawr	2843 2825	NRA WEL	27 2
055011 *	Ithon at Llandrinio	3105 2683	NRA WEL	111 4
055012 *	Irfon at Cilmery	2995 2507	NRA WEL	244 2
055013 *	Arrow at Titley Mill	3328 2585	NRA WEL	126 4
055014 *	Lugg at Byton	3364 2647	NRA WEL	703 3
055015 *	Honddu at Talolog	3277 2294	NRA WEL	25 1
055016 *	Ithon at Disserth	3024 2578	NRA WEL	358 0
055017 *	Chwefru at Carreg y wen	2998 2531	NRA WEL	29 0
055018 *	Frome at Yarkhill	3615 2428	NRA WEL	144 0
055021 *	Lugg at Butts Bridge	3502 2589	NRA WEL	371 0
055022 *	Trothy at Mitchel Troy	3503 2117	NRA WEL	142 0
055023 *	Wye at Redbrook	3528 2110	NRA WEL	4010 0
055025 *	Llynfi at Three Cocks	3166 2373	NRA WEL	132 0
055026 *	Wye at Oddi Farm	2976 2678	NRA WEL	174 0
055027 *	Rudhall Brook at Sandford Bridge	3641 2257	NRA WEL	13 2
055028 *	Frome at Bishops Frome	3667 2489	NRA WEL	77 7
055029 *	Monnow at Grosmont	3415 2249	NRA WEL	354 0
055030 *	Claerwen at Dol-y-mynach	2910 2620	NRA WEL	95 3
055031 *	Yazor Brook at Three Elms	3492 2415	NRA WEL	42 3
055032 *	Elan at Elan Village	2934 2653	NRA WEL	184 0
055033 *	Wye at Gwy flume	2824 2853	IH	3 9
055034 *	Cyff at Cyff flume	2824 2842	IH	3 1
055035 *	Iago at Iago flume	2826 2854	IH	1 1
056001 *	Usk at Chain Bridge	3345 2056	NRA WEL	911 7
056002 *	Ebbw at Rhiwderyn	3259 2889	NRA WEL	216 5
056003 *	Honddu at The Forge Brecon	3051 2297	NRA WEL	62 1
056004 *	Usk at Llandetty	3127 2703	NRA WEL	543 9
056005 *	Lwyd at Ponthir	3330 1924	NRA WEL	98 1
056006 *	Usk at Trallong	2947 2295	NRA WEL	183 8
056007 *	Senni at Pont Hen Hafod	2928 2255	NRA WEL	19 9
056008 *	Monks Ditch at Llanwern	3372 1885	NRA WEL	15 4
056010 *	Usk at Trostrey Weir	3358 2042	NRA WEL	827 2
056011 *	Sirhowy at Wattsville	3206 1912	NRA WEL	76 1
056012 *	Grwyne at Millbrook	3241 2176	NRA WEL	82 2
056013 *	Ysgir at Pontarysgir	3003 2304	NRA WEL	62 8
056014 *	Usk at Usk Reservoir	2840 2290	NRA WEL	17 0
056015 *	Olway Brook at Olway Inn	3384 2010	NRA WEL	105 1
056016 *	Caerfanell Outfall at Talybont Reservoir	3104 2206	NRA WEL	32 4
057001 *	Taf Fechan at Taf Fechan Reservoir	3060 2117	NRA WEL	33 7
057002 *	Taf Fawr at Llwynon Reservoir	3012 2111	NRA WEL	43 0
057003 *	Taff at Tongwynlais	3132 1818	NRA WEL	486 9
057004 *	Cynon at Abercynon	3079 1956	NRA WEL	106 0
057005 *	Taff at Pontypridd	3079 1897	NRA WEL	454 8
057006 *	Rhondda at Trehafod	3054 1909	NRA WEL	100 5
057007 *	Taff at Fiddlers Elbow	3089 1951	NRA WEL	194 5
057008 *	Rhymney at Llanedeyrn	3225 1821	NRA WEL	178 7
057009 *	Ely at St Fagans	3121 1770	NRA WEL	145 0
057010 *	Ely at Laneley	3034 1827	NRA WEL	39 4
057011 *	Bleen Taf Fawr at Beacons Reservoir	2987 2193	NRA WEL	5 1
057012 *	Garwnant at Llwynon Reservoir	3004 2129	NRA WEL	4 3
057015 *	Taff at Merthyr Tydfil	3043 2068	NRA WEL	104 1
057016 *	Taf Fechan at Pontsticill	3060 2115	NRA WEL	33 8
058001 *	Ogmore at Bridgend	2904 1794	NRA WEL	158 0
058002 *	Neath at Resolven	2815 2017	NRA WEL	190 9
058003 *	Ewenny at Ewenny Priory	2914 1780	NRA WEL	62 9
058005 *	Ogmore at Brynmenyn	2904 1844	NRA WEL	74 3
058006 *	Mellte at Pontneddfechan	2915 2067	NRA WEL	65 8
058007 *	Llynfi at Coytrahen	2891 1855	NRA WEL	50 2
058008 *	Dulas at Cefnrew	2778 2008	NRA WEL	43 0
058009 *	Ewenny at Keepers Lodge	2920 1782	NRA WEL	62 5
058010 *	Hepste at Esgair Carnau	2969 2134	NRA WEL	11 0
058011 *	Thew at Gigman Bridge	3017 1716	NRA WEL	49 2
058012 *	Afan at Marcroft Weir	2771 1910	NRA WEL	87 8
059001 *	Tawe at Ynystanglws	2885 1998	NRA WEL	227 7
059002 *	Loughor at Ty-y-dail	2623 2127	NRA WEL	46 4
060002 *	Cothi at Felin Mynachdy	2508 2225	NRA WEL	297 8
060003 *	Taf at Clogy-Iran	2238 2160	NRA WEL	217 3
060004 *	Dewi Fawr at Glastryn Ford	2290 2175	NRA WEL	40 1
060005 *	Bran at Llandovery	2771 2343	NRA WEL	66 8
060006 *	Gwili at Glangwili	2431 2220	NRA WEL	129 5
060007 *	Tywi at Dolau Hirion	2762 2362	NRA WEL	231 8
060008 *	Tywi at Ystradffin	2788 2472	NRA WEL	89 8
060009 *	Sawdde at Felin-y-cwm	2712 2266	NRA WEL	81 1
060010 *	Tywi at Nantgaredig	2485 2206	NRA WEL	1090 4
060012 *	Twrch at Ddol Las	2650 2440	NRA WEL	20 7
060013 *	Cothi at Pont Ynys Brochfa	2537 2301	NRA WEL	261 6
061001 *	Western Cleddau at Prendergast Mill	1954 2177	NRA WEL	197 6
061002 *	Eastern Cleddau at Canaston Bridge	2072 2153	NRA WEL	183 1
061003 *	Gwaun at Cilmedyn Bridge	2005 2349	NRA WEL	31 3
061004 *	Western Cleddau at Redhill	1942 2184	NRA WEL	197 6
062001 *	Taff at Glan Taff	2744 2418	NRA WEL	893 6
062002 *	Taff at Llanfair	2433 2406	NRA WEL	510 0
063001 *	Ystwyth at Pont Llolwyn	2591 2774	NRA WEL	169 6
063002 *	Rheidol at Llanbadarn Fawr	2601 2804	NRA WEL	182 1
063003 *	Wyre at Llanrhystyd	2542 2698	NRA WEL	40 6
063004 *	Ystwyth at Cwm Ystwyth	2791 2737	NRA WEL	32 1
063005 *	Maesnant at Nant y Moch C	2778 2877	IH	0 6
063006 *	Maesnant Fach at Nant-y-Moch F	2765 2865	IH	0 8
064001 *	Dyfi at Dyfi Bridge	2745 3019	NRA WEL	471 3
064002 *	Dysynni at Pont y garth	2632 3068	NRA WEL	75 1
064006 *	Leri at Dolybont	2635 2882	NRA WEL	47 2
064007 *	Delyn at Llanbrynmair	2899 3062	IH	1 1
064008 *	Cwm at Llanbrynmair E	2916 3087	IH	3 0
065001 *	Glaslyn at Beddgelert	2592 3478	NRA WEL	68 6
065002 *	Dwyryd at Maentwrog	2670 3415	NRA WEL	78 2
065004 *	Gwyrfai at Bontnewydd	2484 3589	NRA WEL	47 9
065005 *	Erch at Pencaenewydd	2400 3404	NRA WEL	18 1
065006 *	Seiont at Peblig Mill	2493 3623	NRA WEL	74 4
065007 *	Dwyfawr at Garndolbenmaen	2499 3429	NRA WEL	52 4
066001 *	Clwyd at Pont-y-cambwll	3089 3709	NRA WEL	404 0
066002 *	Elwy at Pant yr Onen	3021 3704	NRA WEL	220 0
066003 *	Aled at Bryn Aled	2957 3703	NRA WEL	70 0
066004 *	Wheeler at Bodfan	3105 3714	NRA WEL	62 9
066005 *	Clwyd at Ruthin Weir	3122 3592	NRA WEL	95 3
066006 *	Elwy at Pont-y-gwyddel	2952 3718	NRA WEL	194 0
066008 *	Aled at Aled Isaf Reservoir	2915 3598	NRA WEL	11 6
066011 *	Conwy at Cwm Llanerch	2802 3581	NRA WEL	344 5
067001 *	Dee at Bala	2942 3357	NRA WEL	281 8
067002 *	Dee at Erbistock Rectory	3357 3413	NRA WEL	1040 0
067003 *	Brenig at Llyn Brenig outflow	2974 3539	NRA WEL	20 2
067005 *	Cerrig at Brynkinalt Weir	3295 3373	NRA WEL	113 7
067006 *	Alwen at Druid	3042 3436	NRA WEL	184 7
067008 *	Alyn at Pont-y-capel	3336 3541	NRA WEL	227 1
067009 *	Alyn at Rhydymwyn	3206 3667	NRA WEL	77 8
067010 *	Gelyn at Cynefail	2843 3420	NRA WEL	13 1
067011 *	Nant Aberderfel at Nant Aberderfel	2851 3392	NRA WEL	3 7
067012 *	Tryweryn at Upper Tryweryn	2838 3398	NRA WEL	27 2
067013 *	Hernant at Plas Rhiwedog	2948 3349	NRA WEL	33 9
067015 *	Dee at Manley Hall	3348 3415	NRA WEL	1019 3
067016 *	Worthenbury Brook at Worthenbury	3418 3464	NRA WEL	14 7 1
067017 *	Tryweryn at Llyn Celyn outflow	2880 3399	NRA WEL	59 9
067018 *	Dee at New Inn	2874 3308	NRA WEL	53 9
067025 *	Clywedog at Bowling Bank	3396 3483	NRA WEL	98 6
067026 *	Dee at Eccleston Ferry	3415 3612	NRA WEL	1816 8
067028 *	Cedog at Llandrillo	3034 3371	NRA WEL	38 5
067029 *	Trystion at Pen-y felin Fawr	3066 3405	NRA WEL	12 3
068001 *	Weaver at Ashbrook	3670 3833	NRA NW	622 0
068002 *	Gowy at Picton	3443 3714	NRA NW	156 2
068003 *	Dane at Rudheath	3668 3718	NRA NW	407 1
068004 *	Wistaston Brook at Marshfield Bridge	3674 3552	NRA NW	92 7
068005 *	Weaver at Audlem	3653 3431	NRA NW	207 0
068006 *	Dane at Holme Wetfield	3845 3644	NRA NW	150 0
068007 *	Wincham Brook at Lostock Gralam	3697 3757	NRA NW	148 0
068010 *	Fender at Ford	3281 3880	NRA NW	18 4
068015 *	Gowy at Huxley	3497 3824	NRA NW	49 0
068018 *	Dane at Congleton Park	3861 3632	NRA NW	145 0
068020 *	Gowy at Bridge Trafford	3448 3711	NRA NW	158 0
069001 *	Mersey at Irlam Weir	3728 3936	NRA NW	679 0
069002 *	Irwell at Adelphi Weir	3824 3987	NRA NW	559 4
069003 *	Irk at Scotland Weir	3841 3992	NRA NW	72 5
069004 *	Etherow at Bottoms Reservoir	4023 3971	NRA NW	78 2
069005 *	Glaze Brook at Little Woodrinn Hall	3685 3939	NRA NW	152 0
069006 *	Bollin at Dunham Massey	3727 3875	NRA NW	258 0
069007 *	Mersey at Ashton Weir	3772 3936	NRA NW	660 0
069008 *	Dean at Stanneylands	3848 3830	NRA NW	51 8
069011 *	Micker Brook at Cheadle	3855 3889	NRA NW	67 3
069012 *	Bollin at Wilmslow	3850 3815	NRA NW	72 5
069013 *	Sinderland Brook at Partington	3728 3905	NRA NW	44 8
069015 *	Etherow at Compstall	3982 3908	NRA NW	156 0
069017 *	Goyt at Marple Bridge	3964 3898	NRA NW	183 0
069018 *	Newton Brook at Newton Le Willows	3585 3933	NRA NW	32 8
069019 *	Worsley Brook at Eccles	3753 3980	NRA NW	24 9
069020 *	Medlock at London Road	3849 3975	NRA NW	57 5
069023 *	Roch at Blackford Bridge	3807 4077	NRA NW	186 0
069024 *	Croal at Farnworth Weir	3743 4068	NRA NW	145 0
069027 *	Tame at Portwood	3908 3918	NRA NW	150 0
069030 *	Sankey Brook at Causey Bridge	3588 3922	NRA NW	154 0
069031 *	Ditton Brook at Greens Bridge	3457 3865	NRA NW	47 9
069032 *	Alt at Kirkby	3392 3983	NRA NW	90 1
069034 *	Musbury Brook at Helmshore	3775 4213	NRA NW	3 1
069035 *	Irwell at Bury Bridge	3787 4109	NRA NW	155 0
069037 *	Mersey at Westy	3617 3877	NRA NW	2030 0
069040 *	Irwell at Stubbins	3783 4188	NRA NW	105 0
070002 *	Douglas at Wanes Blades Bridge	3476 4126	NRA NW	198 0
070003 *	Douglas at Central Park Wigan	3587 4061	NRA NW	55 3
070004 *	Yarrow at Croston Mill	3498 4180	NRA NW	74 4
070005 *	Lostock at Littlewood Bridge	3497 4197	NRA NW	56 0
071001 *	Ribble at Samlesbury	3589 4304	NRA NW	1145 0
071003 *	Croasdale at Croasdale flume	3706 4546	NWW	10 4
071004 *	Calder at Whalley Weir	3729 4360	NRA NW	318 0
071005 *	Bottoms Beck at Bottoms Beck flume	3745 4585	NWW	10 6
071008 *	Ribble at Henthorn	3722 4392	NRA NW	458 0
071007 *	Ribble at Hodderfoot	3709 4379	NRA NW	720 0
071008 *	Hodder at Hodder Place	3704 4399	NRA NW	261 0
071009 *	Ribble at Jumbles Rock	3702 4378	NRA NW	1053 0
071010 *	Pendle Water at Barden Lane	3837 4351	NRA NW	108 0
071011 *	Ribble at Arnford	3839 4556	NRA NW	204 0
071013 *	Darwen at Ewood Bridge	3677 4262	NRA NW	39 5
071014 *	Darwen at Blue Bridge	3565 4278	NRA NW	128 0

Station number	River and station name	Grid reference	Auth-ority	Area (sq km)
072001 *	Lune at Halton	3503 4647	NRA-NW	894 6
072002	Wyre at St Michaels	3463 4411	NRA-NW	275 0
072004	Lune at Caton	3529 4653	NRA-NW	983 0
072005	Lune at Killington New Bridge	3622 4907	NRA-NW	219 0
072006	Lune at Kirkby Lonsdale	3615 4778	NRA-NW	507.1
072007	Brock at U/S A6	3512 4405	NRA-NW	32 0
072008	Wyre at Garstang	3488 4447	NRA-NW	114 0
072009	Wenning at Wennington Road Bridge	3615 4701	NRA-NW	142 0
072011	Rawthey at Bragg Flatts	3639 4911	NRA-NW	200 0
072014	Conder at Galgate	3481 4554	NRA-NW	28 5
072015	Lune at Lunes Bridge	3612 5029	NRA-NW	141 5
072016	Wyre at Scorton Weir	3501 4500	NRA-NW	88 8
073001 *	Leven at Newby Bridge	3371 4863	NRA-NW	241 0
073002	Crake at Low Nibthwaite	3294 4882	NRA-NW	73 0
073003 *	Kent at Burneside	3507 4958	NRA-NW	73 6
073005	Kent at Sedgwick	3509 4874	NRA-NW	209 0
073006	Cunsey Beck at Eel House Bridge	3369 4940	NRA-NW	18 7
073008	Bela at Beetham	3496 4806	NRA-NW	131 0
073009	Sprint at Sprint Mill	3514 4961	NRA-NW	34 8
073010	Leven at Newby Bridge	3387 4883	NRA-NW	247 0
073011	Mint at Mint Bridge	3524 4944	NRA-NW	65 8
073013	Rothay at Miller Bridge House	3371 5042	NRA-NW	84 0
073014	Brathay at Jetty Knotts	3380 5034	NRA-NW	57 4
074001	Duddon at Duddon Hall	3196 4896	NRA-NW	85 7
074002	Irt at Galesyke	3136 5038	NRA-NW	44 2
074003	Ehen at Ennerdale Weir	3084 5154	NRA-NW	44 2
074005	Ehen at Braystones	3009 5061	NRA-NW	175 5
074006	Calder at Calder Hall	3035 5045	NRA-NW	44 8
074007	Esk at Cropple How	3131 4978	NRA-NW	70 2
074008	Duddon at Ulpha	3209 4947	NRA-NW	47 9
075001	St Johns Beck at Thirlmere Reservoir	3313 5195	NRA-NW	42.1
075002	Derwent at Camerton	3038 5305	NRA-NW	683 0
075003	Derwent at Ouse Bridge	3199 5321	NRA-NW	383 0
075004	Cocker at Southwaite Bridge	3131 5281	NRA-NW	116 6
075005	Derwent at Portinscale	3251 5239	NRA-NW	235 0
075006 *	Newlands Beck at Braithwaite	3240 5239	NRA-NW	33 9
075007 *	Glenderamackin at Threlkeld	3323 5248	NRA-NW	64 5
075009	Greta at Low Briery	3286 5242	NRA-NW	145 6
075016	Cocker at Scalehill	3149 5214	NRA-NW	84 0
075017	Ellen at Bullgill	3098 5384	NRA-NW	98 0
076001	Haweswater Beck at Burnbanks	3508 5159	NRA-NW	33 0
076002	Eden at Warwick Bridge	3470 5587	NRA-NW	1386 7
076003	Eamont at Udford	3578 5306	NRA-NW	396 2
076004	Lowther at Eamont Bridge	3527 5287	NRA-NW	158 5
076005	Eden at Temple Sowerby	3605 5283	NRA-NW	616 4
076007	Eden at Sheepmount	3390 5571	NRA-NW	2288 5
076008	Irthing at Greenholme	3486 5581	NRA-NW	334 6
076009	Caldew at Holm Hill	3378 5469	NRA-NW	147 2
076010	Petteril at Harraby Green	3412 5545	NRA-NW	160 0
076011	Coal Burn at Coalburn	3693 5777	IH	1 5
076014	Eden at Kirkby Stephen	3773 5097	NRA-NW	69 4
076015	Eamont at Pooley Bridge	3472 5249	NRA-NW	145 0
077001	Esk at Netherby	3390 5718	NRA-NW	841 7
077002	Esk at Canonbie	3397 5751	SRPB	495 0
077003	Liddel Water at Rowanburnfoot	3415 5759	SRPB	319 0
077004	Kirtle Water at Mossknowe	3285 5693	SRPB	72 0
077005	Lyne at Cliff Bridge	3412 5862	NRA-NW	191 0
078001 *	Annan at St Mungos Manse	3125 5755	SRPB	730 3
078002 *	Ae at Elphesheilds	3068 5852	SRPB	143 2
078003	Annan at Brydekirk	3191 5704	SRPB	925 0
078004	Kinnel Water at Rachel	3077 5868	SRPB	78 1
078005	Kinnel Water at Bridgemuir	3091 5845	SRPB	229 0
078006	Annan at Woodfoot	3099 6010	SRPB	217 0
079001 *	Alton Water at Alton Reservoir	2631 6050	SRPB	8 5
079002	Nith at Friars Carse	2923 5851	SRPB	799 0
079003	Nith at Hall Bridge	2684 6129	SRPB	155 0
079004	Scar Water at Capercoch	2845 5940	SRPB	142 0
079005	Cluden Water at Fiddlers Ford	2928 5795	SRPB	238 0
079006	Nith at Drumlanrig	2858 5994	SRPB	471 0
080001	Urr at Delbeattie	2822 5810	SRPB	199 0
080002	Dee at Glenlochar	2733 5641	SRPB	809 0
080003	White Laggan Burn at Loch Dee	2468 5781	SRPB	5 7
080004	Greenburn at Loch Dee	2478 5797	SRPB	2 6
080005	Dargall Lane at Loch Dee	2451 5787	SRPB	2 1
080006	Blackwater at Loch Dee	2478 5797	SRPB	15 6
081001 *	Penwhirn Burn at Penwhirn Reservoir	2128 6694	DGRW	18 2
081002	Cree at Newton Stewart	2412 5653	SRPB	368 0
081003	Luce at Airyhemming	2180 5589	SRPB	171 0
081004	Bladnoch at Low Malzie	2382 5545	SRPB	334 0
081005	Piltanton Burn at Barsolus	2107 5564	SRPB	34 2
081006	Water of Minnoch at Minnoch Bridge	2363 5748	SRPB	141 0
081007	Water of Fleet at Rusko	2592 5590	SRPB	
082001	Girvan at Robstone	2217 5997	CRPB	245 5
082002	Doon at Auchendrane	2338 6160	CRPB	323 8
082003	Stinchar at Balnowlert	2108 5832	CRPB	341 0
083001 *	Coal Water at Knockendon Reservoir	2245 6514	SRCW	6 0
083002 *	Garnock at Dalry	2293 6488	CRPB	88 8
083003	Ayr at Catrine	2525 6259	CRPB	186 3
083004	Lugar at Langholm	2508 6217	CRPB	181 0
083005	Irvine at Shewalton	2345 6369	CRPB	380 7
083006	Ayr at Manholm	2361 6216	CRPB	574 0
083007	Lugton Water at Eglinton	2315 6420	CRPB	54 6
083008	Annick Water at Dreghorn	2352 6384	CRPB	95 3
083009	Garnock at Kilwinning	2307 6424	CRPB	183 8
083010	Irvine at Newmains	2532 6372	CRPB	72 8
084001	Kelvin at Killermont	2558 6705	CRPB	335 1
084002 *	Calder at Murshiel	2309 6638	SRCW	12 4
084003	Clyde at Hazelbank	2835 6452	CRPB	1092.9
084004	Clyde at Sills	2927 6424	CRPB	741 8
084005	Clyde at Blairston	2704 6579	CRPB	1704 2
084006 *	Kelvin at Bridgend	2672 6749	CRPB	63 7
084007	South Calder Wtr at Forgewood	2751 6585	CRPB	93 0
084008	Rotten Calder Wtr at Redlees	2679 6604	CRPB	51 3
084009	Nethan at Kirkmuirhill	2809 6429	CRPB	68 0
084011	Gryfe at Craigend	2415 6664	CRPB	71 0
084012	White Cart Water at Hawkhead	2499 6629	CRPB	227 2
084013	Clyde at Daldowie	2672 6616	CRPB	1903 1
084014	Avon Water at Fairholm	2755 6518	CRPB	265 5
084015	Kelvin at Dryfield	2638 6739	CRPB	235 4
084016	Luggie Water at Condorrat	2739 6725	CRPB	33 9
084017	Black Cart Water at Milken Park	2411 6620	CRPB	103 1
084018	Clyde at Tulliford Mill	2891 6404	CRPB	932 6
084019	North Calder Wtr at Calderpark	2681 6625	CRPB	129 8
084020	Glazert Water at Milton of Campsie	2656 6783	CRPB	51 9
084021 *	White Cart Water at Netherlee	2587 6597	CRPB	91 6
084022	Dunaston at Medencors	2979 6259	CRPB	110 3
084023	Bothlin Burn at Auchengeich	2880 6717	CRPB	35 7
084024	North Calder Wtr at Hillend	2828 6678	CRPB	19 9
084025	Luggie Water at Oxgang	2688 6734	CRPB	87 7
084026	Allander Water at Milngavie	2558 6738	CRPB	32 8
084027 *	North Calder Wtr at Calderbank	2765 6824	CRPB	60 6
084028	Monkland Canal at Woodhall	2765 6626	CRPB	60 6
084029	Calder Water at Candermill	2765 6471	CRPB	24 5
084030	White Cart Water at Overlee	2587 6598	CRPB	111 8
085001	Leven at Linnbrane	2394 6803	CRPB	784 3
085002	Endrick Water at Gadrew	2485 6866	CRPB	219 9
085003	Felloch at Glen Felloch	2321 7197	CRPB	80 3
085004	Luss Water at Luss	2356 6929	CRPB	35 3
086001	Little Eachaig at Dalintober	2143 6821	CRPB	30 8
086002	Eachaig at Eckford	2140 6843	CRPB	139 9
089008	Eas Damh at Eas Damh	2239 7276	CRPB	4 5
089009	Eas AGhaill at Succoith	2209 7265	CRPB	9 7
090003	Nevis at Claggan	2116 7742	HRPB	76 8
091002	Lochy at Camisky	2145 7805	HRPB	1252 0
093001	Carron at New Kelso	1942 8429	HRPB	137 8
094001	Ewe at Poolewe	1859 8803	HRPB	441 1
095001	Inver at Little Assynt	2147 9250	HRPB	137 5
095002	Broom at Inverbroom	2184 8842	HRPB	141 4
096001	Helladale at Helladale	2891 9561	HRPB	204 6
096002	Naver at Apigill	2713 9568	HRPB	477 0
096003	Strathy at Strathy Bridge	2836 9652	HRPB	111 8
096004	Allnabad at Strathmore	2453 9429	HRPB	105 0
097001 *	Calder Burn at Achavarn	3085 9596	HRCW	24 5
097002	Thurso at Halkirk	3131 9595	HRPB	412 8
101001 *	Eastern Yar at Alverstone Mill	4577 0857	NRA-S	57 5
101002	Medina at Upper Shide	4503 0874	NRA S	29 8
101003	Lukely Brook at Newport	4491 0886	NRA-S	16 2
101004	Eastern Yar at Burnt House	4583 0853	NRA-S	59 6
101005	Eastern Yar at Budbridge	4531 0835	NRA-S	22 5
101006	Wroxall Stream at Weightshale	4538 0839	NRA-S	15 8
101007	Scotchells Brook at Burnt House	4583 0852	NRA-S	9 2
201002	Ferry Water at Dudgeon Bridge	*2406 3758*	DOEN	161 2
201005	Camowen at Camowen Terrace	*2460 3730*	DOEN	274 6
201006	Drumragh at Campsie Bridge	*2458 3722*	DOEN	324 6
201007	Burn Dennet at Burndennet Bridge	*2372 4047*	DOEN	145 3
201008	Derg at Castlederg	*2265 3842*	DOEN	337 3
201009	Owenkillew at Crosh	*2418 3866*	DOEN	442 4
201010	Mourne at Drumnabuoy House	*2347 3960*	DOEN	1844 5
202001	Roe at Ardnargle	*2674 4247*	DOEN	365 6
202002	Faughan at Drumahoe	*2464 4151*	DOEN	272 3
203010	Blackwater at Maydown Bridge	*2820 3519*	DOEN	951 4
203011 *	Main at Dromore	*3052 4086*	DOEN	228 8
203012	Ballinderry at Ballinderry Bridge	*2928 3799*	DOEN	419 5
203013	Main at Andrasd	*3092 3913*	DOEN	646 8
203017	Upper Bann at Dynes Bridge	*3043 3509*	DOEN	335 6
203018	Six Mile Water at Antrim	*3146 3867*	DOEN	277 3
203019	Claudy at Glenone Bridge	*2962 4037*	DOEN	130 1
203020	Moyola at Moyola New Bridge	*2955 3905*	DOEN	306 5
203021	Kells Water at Currys Bridge	*3106 3971*	DOEN	127 0
203023	Torrent at The Moor Bridge	*2858 3649*	DOEN	59 9
203024	Cusher at Gambles Bridge	*3048 3471*	DOEN	176 7
203025	Callan at Callan New Bridge	*2893 3524*	DOEN	184 1
203026	Glenavy at Glenavy	*3149 3775*	DOEN	44 6
203027	Braid at Ballee	*3097 4014*	DOEN	177 2
203028	Agivey at White Hill	*2883 4193*	DOEN	98 9
203029	Six Mile Water at Ballyclare	*3282 3902*	DOEN	58 4
203033	Upper Bann at Bannfield	*3233 3341*	DOEN	100 9
203038	Rocky at Rocky Mountain	*3743 3265*	DOEN	6 7
203040	Lower Bann at Movanagher	*2931 4154*	DOEN	5209 8
203042	Crumlin at Cedercourt Bridge			
203092	Main at Dunmmnning Lower	*3051 4111*	DOEN	211 7
203093	Main at Shane s Viaduct	*3086 3896*	DOEN	704 2
204001	Bush at Seneirl	*2942 4362*	DOEN	306 1
205003 *	Lagan at Dunmurry	*3299 3679*	DOEN	444 7
205004	Lagan at Newforge	*3329 3693*	DOEN	490 4
205005	Ravernet at Ravernet	*3267 3813*	DOEN	69 5
205006 *	Lagan at Blane	*3259 3628*	DOEN	315 9
205008	Lagan at Drummiller	*3236 3525*	DOEN	85 2
205010	Lagan at Banoge	*3123 3540*	DOEN	189 8
205020	Enler at Comber	*3459 3697*	DOEN	59 8
206001 *	Clanrye at Mount Mill Bridge	*3086 3309*	DOEN	132 7
206002	Jerretspass at Jerretspass	*3064 3332*	DOEN	41 6
236005	Colebrooke at Ballinderragh Bridge	*2331 3359*	DOEN	309 1
236007	Sillees at Drumraney Bridge	*2205 3400*	DOEN	167 6

† Irish Grid references are italicised.

* = closed, or no data for post 1987 have been received

Refer to page 190 for key to measuring authorities

Summary of Archived Data – 1

Gauged daily flows, monthly peaks and monthly rainfall

KEY:

	Complete rainfall	Incomplete or missing rainfall
Complete daily and complete peaks	A	a
Complete daily and partial peaks	B	b
Complete daily and no peaks	C	c
Partial daily and complete peaks	D	d
Partial daily and partial peaks	E	e
Partial daily and no peaks	F	f
No flow data	↑	–

Summary is presented in decade blocks

Stn number	Gauged daily flows, monthly peaks and rainfall																			
002001	70s	-----eeeee	80s	eAAAAAAAAA	010002	60s	-↑↑↑↑↑↑↑↑	70s	↑EAAAAAAAA	016001	40s	-- ---Cc	50s	cBAAbbAAAA						
	90s	Ae				80s	AAAAAAAAAA	90s	A		60s	AAAAAAAAAA	70s	AAAAAAAAAA						
					010003	80s	---eeAAAAA	90s	A		80s	BD*CCAAAAA	90s	A						
003001	50s	---eAAAe--	60s	----------						016002	50s	-----eAAAA	60s	AAAAAAAAAA						
	70s	----------	80s	------↑↑↑↑	011001	60s	-↑↑↑↑↑↑↑E	70s	AAAAAAAAAA		70s	AAAAAAAA↑↑								
	90s	↑				80s	AAAAAAAAAA	90s	A	016003	60s	·↑↑↑↑↑↑↑↑	70s	EDAABAAAAA						
003002	70s	----eeeee	80s	eAAAAAAAAA	011002	60s	-↑↑↑↑↑↑↑F	70s	CBAAAAAAAA		80s	AAAAAAAAAA	90s	A						
	90s	Ae				80s	AAAACAAAAA	90s	Ae	016004	70s	--eAAAAAAA	80s	ADDAAAAAAA						
003003	70s	-------eAA	80s	AAAAAAAAAA	011003	60s	-↑↑↑↑↑↑↑↑	70s	↑↑↑EAAAAAA		90s	A								
	90s	Ae				80s	AAAACAAAAA	90s	Ae	016006	80s	---------cc	90s	c						
003004	70s	----------E	80s	AAAAAAeeeA	011004	80s	----------e	90s	A											
	90s	Ae			011005	80s	----------d	90s	e	017001	60s	----------E	70s	AAAAAAAAAB						
003005	80s	-eeeeAeeee	90s	be							80s	AAAAAAAAA	90s	A						
					012001	20s	----------e	30s	B8888BAAAA	017002	60s	---------E	70s	AAAAAAAAAA						
004001	40s	--------fcf	50s	cccbAEAAEA		40s	BABBAABCCC	50s	CCCCCCCCCC		80s	AAAAAAAAA	90s	A						
	60s	BABABAAAAA	70s	F↑↑↑↑↑AAAA		60s	CCCCCBAAAA	70s	BCBAAAAAAA	017003	70s	↑EAAAAAAAA	80s	AAAAAAAAAA						
	80s	AAAAAAAAAA	90s	Ae		80s	AAAAAAAAAA	90s	A		90s	A								
004003	70s	----eeeeee	80s	eAAAAAAAAA	012002	70s	--eAAAAAAA	80s	AAAAAAAAAA	017004	70s	--EAAAAAAA	80s	AAAAAAAAAA						
	90s	Ae				90s	Ae				90s	A								
004004	80s	-eeeeAeeee	90s	ee	012003	70s	-----eeeee	80s	eAAAAAAAAA	017005	70s	EAAAAAAAB	80s	AAAAAAEAAA						
004005	80s	·····eeeA	90s	Ae		90s	Ae				90s	A								
004006	90s	ee			012004	60s	----------f	70s	eeeeeeeee	017008	80s	---------ee	90s	A						
						80s	bCCCCAAAAf	90s	↑	017012	80s	----↑↑EAAA	90s	A						
005001	50s	--eAAAAAA	60s	AAE-↑↑↑↑↑	012005	70s	------eeee	80s	eAAAAAAAAA	017018	80s	------eeee	90s	e						
	70s	↑↑↑↑				90s	A			017017	80s	ec	90s	:						
005002	80s	------eeee	90s	ee	012006	70s	---------ee	80s	eAAAAAAAAA											
005003	80s	----------e	90s	ee		90s	Ae			018001	50s	--- EAA	60s	AAAAAAAAAA						
					012007	80s	--eeeAAAAC	90s	Ae		70s	AAAAAAAAAA	80s	AAAAAAAAAA						
006001	30s	-----eAAAB	40s	BBBABBBBAA	012008	80s	-----dceeA	90s	A		90s	A								
	50s	E↑↑EAAAAAA	60s	AAAEf*↑↑↑↑						018002	50s	---------b	60s	ABAAAAAAAA						
	70s	↑↑↑↑------	80s	----------	013001	70s	----------e	80s	eAAAAAAAAA		70s	BbbAAAAAAA	80s	AAAAAeeeee						
	90s	↑				90s	Ae				90s	A								
006003	20s	----------f	30s	cccccccccc	013002	80s	--cccAAAAA	90s	A	018003	50s	·-------ccc	60s	ccccbAAAAA						
	40s	ccccc!----	50s	----------	013003	70s	----------c	80s	ccc---↑↑↑↑		70s	AAEAAAAAAA	80s	AAAAAAAAAA						
	60s	----------	70s	----------		90s	↑				90s	A								
	80s	------↑↑↑↑	90s	↑	013004	80s	-----AcceA	90s	A	018005	70s	↑EAAAAAAAA	80s	AAAAAAAAAA						
006008	50s	---eAAAAAB	80s	BAe-------	013005	80s	-ecccAAAAA	90s	A		90s	A								
	70s	----------	80s	------↑↑↑↑	013007	70s	------CCCC	80s	CCCDAAAAAA	018007	80s	↑*eeee	90s	A						
	90s	↑				90s	A			018008	70s	---eAAAAAA	80s	AAAAAAAAAA						
006007	70s	---AAAAAAA	80s	AAAAAAeeee	013008	80s	---AAAAAAA	90s	A		90s	A								
	90s	ee			013009	80s	-----*AAAA	90s	A	018010	80s	--↑↑eeee	90s	A						
006008	70s	----------E	80s	AAAAAAAAAA	013010	80s	----------e	90s	e	018011	80s	-fcAAAAAAA	90s	A						
	90s	Ae								018012	80s	----↑↑ee--	90s	↑						
					014001	60s	-↑↑↑*↑↑EAA	70s	AAAAAAAAAA	018013	80s	-↑↑acce .	90s	e						
007001	60s	eAAAAAAAAA	70s	AAAAAAAAAA		80s	AAAAAAAAAA	90s	A	018014	80s	----↑↑eeee	90s	A						
	80s	AAAAAAAAAA	90s	Ae	014002	80s	-↑↑↑*↑↑↑E	70s	AAAAAAAAAA	018016	80s	---- AAAA	90s	A						
007002	50s	---------eA	60s	AAAAAAAAAA		80s	ACCFCAAAAA	90s	A	018017	80s	--eeeeAAAA	90s	E						
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	014005	80s	----ceeeee	90s	e	018018	80s	---eeeAADE	90s	E						
	90s	Ae			014006	80s	--------cee	90s	e	018019	80s	------↑AC*	90s	*						
007003	60s	---eAAAAAA	70s	AAABAAAAAA	014007	80s	--------eee	90s	e											
	80s	AAAAAADDAA	90s	A						019001	50s	------ AAA	60s	AAAAAAAAAA						
007004	70s	----------e	80s	eAAAAAAAEA	015001	50s	---ee-----	60s	eAAAAAAAE↑		70s	AAAAAAAAAA	80s	AAAAAAAAAA						
	90s	Ae				70s	↑↑*↑↑↑↑*↑↑	80s	*↑↑↑*↑↑↑*		90s	A								
007005	70s	--------Hf	80s	f---eeAAAAA		90s	↑			019002	60s	-↑AAAAAAAA	70s	AAACAAAAAA						
	90s	Ae			015002	50s	----------e	60s	AAAAAAAEE↑		80s	AAAAAAAAAA	90s	A						
007006	80s	--------eeA	90s	Ae		70s	↑↑↑*↑↑↑↑*↑	80s	*↑↑↑*↑↑↑*	019003	60s	-eAAAAAAAA	70s	AAAAAAAAAA						
						90s	↑				80s	D*↑↑---↑↑↑↑	90s	↑						
008001	30s	---------fc	40s	ffccccccc	015003	40s	--------fcC	50s	CBAAAAAAAA	019004	60s	AAAAAAAAAA	70s	AAACAAAAAA						
	50s	bBBAAAAAAA	60s	AAAAAAAAAA		60s	AAAAAAAAAA	70s	AAAAAAAAAA		80s	AAAAAAAAAA	90s	A						
	70s	AAAAA↑↑↑*↑	80s	------↑↑↑↑		80s	ABCFCAeeee	90s	A	019005	60s	--eAAAAAA	70s	AAAAAAAAAA						
	90s	↑			015004	20s	--------CCC	30s	CCCCCCBAe-		80s	AAAAAAAAAA	90s	D						
008002	50s	-eAAABAAAA	60s	AAAAAAAAAA		40s	------↑↑↑↑	50s	EE↑*↑↑↑↑*E	019006	60s	-↑IAAAAAAA	70s	AAAAAAAAAA						
	70s	AAABAAAAAA	80s	AAAAAAAAAA		60s	AAAAAAAEE↑	70s	↑*↑↑↑*↑↑↑		80s	AAAAAAAAAA	90s	A						
	90s	A				80s	↑↑↑↑*↑↑↑↑*	90s	↑	019007	60s	-↑BAAAAAAA	70s	AAAAAAAAAA						
008003	50s	-eAAAAAAAA	60s	AAAAAAAAAA	015005	20s	--------CCC	30s	CCCCCCBAe-		80s	AAAAAAAAAA	90s	A						
	70s	AAAA↑↑↑↑↑				40s	--------↑↑	50s	EE↑EEE*↑↑E	019008	60s	↑↑↑BAAAAA	70s	AAAAAAAAAA						
008004	50s	--EAAAAAAA	60s	AAAAAAAAAA		60s	AEAAAAAAE↑	70s	↑↑*↑↑↑↑*↑↑		80s	AAAAAAAAAA	90s	↑						
	70s	AAAAAAAAAA	80s	AAAAEAAAAA		80s	*↑↑↑↑↑↑↑↑	90s	↑	019010	60s	-- ------A	70s	AAAAAAAAAA						
	90s	Ae			015006	50s	--eAAAAAAA	60s	AAAAAAAAAA		80s	AAAAAEEFFA	90s	A						
008005	50s	-eBAAAAAAA	60s	AAAAAAAAAA		70s	AAAAAAAAAA	80s	BAAAAAAAAA	019011	60s	---cccccc	70s	ccccccaaaa						
	70s	AAAAAAAAAA	80s	AAAAAAAA↑A		80s	A				80s	AAAAAAAAA	90s	A						
	90s	A			015007	50s	--------eAA	60s	AAAAAAAAAA	019012	80s	----↑↑eeee	90s	e						
008006	50s	--eAAAAAAA	60s	AAAAAAAAAA		70s	AAAAAAAAAA	80s	AACCCAeeee	019014	80s	↑↑cf·	90s	↑						
	70s	AAAAAAAAAA	80s	AAAAAAAAAA		90s	A			019017	80s	----↑↑AAAA	90s	A						
	90s	A			015008	50s	---------EA	60s	AAAAAAAAAA											
008007	50s	--eAAAAAAA	60s	AAAAAAAAAA		70s	AAAAAAAAAA	80s	BAFCCAeeee	020001	60s	-AAAAAAAAA	70s	AAAAAAAAAA						
	70s	AAAAAAAAAA	80s	AAAAAAAAAA		90s	A				80s	AAAAAAAAAA	90s	A						
	90s	Ae			015010	70s	--cAAAAAAA	80s	AFCFCAAAAA	020002	60s	-↑↑↑↑EAAA	70s	AAAAAAAAAA						
008008	50s	-eAAAAAAA	60s	AAAAAAAAAA		90s	A				80s	AAAAAAAAAA	90s	A						
	70s	AAAAAAAAAA	80s	AAAAAeeeee	015011	50s	---------cc	60s	ccccccccc	020003	60s	-↑↑↑↑AAAAA	70s	AAAAAAAAAA						
	90s	e				70s	cCBAAAAAAA	80s	ACCCCAAAAA		80s	AAAAAAEAAA	90s	A						
008009	50s	--EABBABBA	60s	AAAAAAAAAA		90s	A			020004	60s	-↑↑↑↑↑AAA	70s	AAAAAAAAAA						
	70s	AAAAAAAAAA	80s	AAAACAAAAA	015012	70s	---BAAAeee	80s	AACCCACCAA		80s	AAAAALeeee	90s	e						
	90s	Ae				90s	A			020005	60s	-↑↑↑CCCCC	70s	CCCCCCAAee						
008010	50s	---eAAAAA	60s	AAAAAAAAAA	015013	50s	-----ccccc	60s	cCCCCCCCCC		80s	AAAAAALAAA	90s	A						
	70s	AAAAAAAAAA	80s	AAAACAAAAA		70s	CCCBAAAAAA	80s	AABCCAAAAA	020006	70s	-- cccAAAD	80s	AAAAAAAADA						
	90s	Ae				90s	A				90s	A								
008011	70s	----- H	80s	feeeeeAAAA	015014	80s	-----acaaa	90s	A	020007	60s	---------↑↑	70s	↑↑↑CCCAAAA						
	90s	A			015015	80s	-------ccee	90s	e		80s	AAAAAAAAAA	90s	A						
					015016	70s	----bAAAAA	80s	AACCCAeeee	020008	80s	--↑↑ABↁ↑	90s	↑						
009001	50s	----------e	60s	AAAAAAAAAA		90s	A													
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	015017	70s	-----eAAAA	80s	A↑↑---↑↑↑↑	021001	50s	-------- e	60s	AAAAFFAAF↑						
	90s	A				90s	↑				70s	↑↑↑↑↑↑↑↑↑	80s	------↑↑↑↑						
009002	60s	eAAAAAAAAA	70s	AAAABAAAAA	015018	50s	---eeeeee				90s	↑								
	80s	AAAAAAA↑AA	90s	Ae	015021	80s	-----fc-cc	90s	C	021002	50s	-------↑↑-e	60s	eBCBAAAAE↑						
009003	80s	-↑↑↑↑↑↑↑F	70s	AAAAAAAAAA	015023	80s	---ccAAAAA	90s	A		70s	↑↑↑↑↑↑↑--	80s	↑↑↑↑						
	80s	AAAA↑AAAAA	90s	A	015024	80s	--cccDAAAA	90s	A		90s	↑								
009004	80s	eeeeeAAAA	90s	Ae	015025	80s	----↑Aeeee	90s	A	021003	50s	----------e	60s	AAAAAAABAA						
009005	40s	---------fc	50s	fffcffffcc	015027	80s	--------cee	90s	A		70s	AAAAAAAAAA	80s	ABBCCAAAAA						
	60s	ccccccccfc	70s	cccccccccc	015028	80s	-------cce-	90s	e		90s	A								
	80s	ccccccaeAA	90s	Ae						021004	60s	-----eAAe-	70s	-------↑↑↑						

Stn. number	Gauged daily flows, monthly peaks and rainfall			
021005	60s	-EAAAAAAAB	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021006	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
021007	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	90s	AABCCAAAAA	90s	A
021008	60s	eAAAAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021009	60s	-fEAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
021010	60s	ffEAAAAAA	70s	AAAAAABAAA
	80s	A††††††††	90s	†
021011	60s	-11EAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021012	60s	-11EAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
021013	60s	-111EAAAAA	70s	AAAAAAAAAA
	80s	AACCCAAAAA	90s	A
021014	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021015	60s	-111*1EAAA	70s	AAAAAAAAAA
	80s	AACCCAAAAA	90s	A
021016	60s	-1111*1EAA	70s	AAAAAAAAAA
	80s	AACCCAAAAA	90s	A
021017	60s	-1111EAAAA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021018	60s	-11*1111EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
021019	60s	-1111111EA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021020	60s	-1*1111EBA	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021021	60s	---------E	70s	AAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021022	60s	-111111*1E	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
021023	60s	-11111111	70s	EAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021024	60s	-1111111	70s	fEAAAAAAAA
	80s	AACCCAAAAA	90s	A
021025	60s	-11111111	70s	f1EAAAAAAA
	80s	AACCCAAAAA	90s	A
021026	60s	-11111111	70s	f11EAAAAAA
	80s	AACCCAAAAA	90s	A
021027	60s	-11111111	70s	111EAAAAAA
	80s	AACCCAAAAA	90s	A
021030	60s	-1111111EA	70s	BAAAAAAAAA
	80s	AABCCAAAAA	90s	A
021031	50s	------eAAB	60s	AEAAAAAAAA
	70s	AAAAAAAAAE	80s	e-----1111
	00s	†		
021032	60s	------eAAA	70s	AAAAAAAEAA
	80s	AAAE--111E	90s	Ee
021034	60s	-1111111F	70s	CCCCCAAAAA
	80s	AAACCAdaaa	90s	A
022001	60s	---fffbAAA	70s	AAAAAAAAAA
	80s	AAAAAABAAA	90s	Ae
022002	50s	--------eAA	60s	FAFAAAAAAA
	70s	AAAAAAAAAA	80s	e-----1111
	90s	†		
022003	50s	--------eAA	60s	BAFAAAAAAA
	70s	AAAAAAAAAA	80s	e------*111
	90s	†		
022004	60s	------eAAA	70s	AAAAAAAAAE
	80s	E111--*111	90s	†
022006	60s	------eDAA	70s	DAAAAAAAAA
	80s	BAAAAAAAAA	90s	Ae
022007	60s	--------*EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAD	90s	Ae
022008	60s	---------E	70s	AAAAAAABAA
	80s	AAAE111111	90s	†
022009	70s	--EDAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
023001	50s	------eAAA	60s	AAAAEAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
023002	50s	-----fCCCCB	60s	AAAAAAAAAA
	70s	AAABAAAAAA	80s	AAAAAAAAEA
	90s	De		
023003	50s	---------e	60s	AAAAAAAADA
	70s	AAAABAAAAA	80s	EAEAAAaeeA
	00s	Ae		
023004	60s	--eAAAAAAA	70s	AAEAAAABAA
	80s	AAAAAAAAAA	90s	Ae
023005	60s	---eAADAD	70s	AAAAAAAAAA
	80s	AAAAAAAE11	90s	†
023006	60s	------eAAA	70s	AAAAAAAEEA
	80s	AAAAAAAAAA	90s	Ae
023007	60s	--eAAAAAAA	70s	AAAAAAAEAA
	80s	BAAAAAAEAD	90s	Ae
023008	60s	---------EA	70s	AAAAAAABAA
	80s	AEAAAAAEAE	90s	De
023009	60s	---------e	70s	AAADDAAAE1
	80s	EAAE111111	90s	†
023010	60s	----------1	70s	EAAAAAAAAA
	80s	e--11-1111	90s	†
023011	60s	----------1	70s	EDAAAAABAA
	80s	EAAAAAAEEF	90s	De
023012	70s	1EBAAAAAAA	80s	e--11-1111
	90s	†		
023013	70s	1EAAAAAAAA	80s	A††††††††
	90s	†		
023014	60s	fccccccccc	70s	cBAEE1**11
	80s	------11*1	90s	†
023015	40s	-1FEEEEEEE	50s	EAEAEFB88e
023016	80s	----------e	90s	de
023022	80s	----------e	90s	ee
023023	80s	----------d	90s	ee
024001	60s	--------fCC	60s	CCCCCCBAAA
	70s	AAAAAAEAAA	80s	EAAAAAAAAA
	90s	Ee		
024002	50s	---------eA	60s	AAAAAAAAAA
	70s	AAAABAAAAA	80s	AAAE111*11
	90s	†		
024003	50s	---------eA	60s	AAAAAAAEAA
	70s	AAAAAAAAAA	80s	AAAAADAAAA
	90s	De .		
024004	50s	----------e	60s	AAAAAAAAAA
	70s	AAAAAAAAEA	80s	AAAAAAAAAA
	90s	Ae		
024005	50s	----eeEAAA	60s	AAAAAAAEAA
	70s	AAAAAAAEEA	80s	AAAAABAAAA
	90s	Ae		
024006	50s	--------foc	60s	bAAAAAAAAA
	70s	AAAAAAAAAA	80s	e------1111
	90s	1		
024007	60s	-------*1EA	70s	AAAAAAAAAA
	80s	AAAE111111	90s	†
024008	70s	--eeeeeee	80s	AAEAAAAAAA
	90s	Ae		
024009	70s	--------eAA	80s	AAAAADAAA
	90s	Ae		
025001	50s	---------eAAA	60s	AAAAAAADAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
025002	50s	- ----M-e	60s	eAAAAAAAAB
	70s	BAAAe--111	80s	-------111*
	90s	:		
025003	50s	--------eAA	60s	AAAEAAAAAA
	70s	AAAAAaeABA	80s	e------*111
	90s	*		
025004	50s	-------eAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAD	80s	AAEADDDADA
	90s	Ae		
025005	50s	----------e	60s	AAAAAAAAAA
	70s	AAAABAAEAA	80s	AAAAAAAAAA
	90s	Ae		
025006	60s	eAAAAAAAAA	70s	AAABAABAAA
	80s	AAAAAAAAAA	90s	Ae
025007	60s	-eAAAAAAAA	70s	AAAAAAAAAA
	80s	E1- --1111	90s	*
025008	60s	-----1EAAA	70s	AAAABAAAEA
	80s	AEAE11 -- f	90s	ee
025009	60s	----------e	70s	ABALEAAAAA
	80s	AAAAAAaeeA	90s	Ae
025010	60s	--------EAA	70s	AEAAE1E111
025011	60s	----------E	70s	AAAAAAAAAA
	80s	AAAE111111	90s	†
025012	60s	----------E	70s	BAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
025013	60s	----------E	70s	EEAEE11111
	80s	----------1	90s	†
025014	60s	----------E	70s	AEE1111---
	80s	----------1	90s	†
025015	60s	----------e	70s	eee--------
	80s	----------1	90s	†
025018	70s	1EFAAAAAAA	80s	AEEAAAAAAA
	90s	Ae		
025019	70s	1EAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
025020	70s	--EAAALALA	80s	AAAAAAAAAA
	90s	Ae		
025021	70s	111EBAAAAA	80s	AAAAADAAAA
	90s	Ae		
025022	70s	----eebeee	80s	e---11
025024	70s	------ee--	80s	----------
	90s	†		
026001	50s	---eAAAB88	60s	B8B8BABAB8
	70s	ALABL*1111	80s	---11*1111
	90s	†		
026002	60s	-eAAAEEB8E	70s	EAAAAAAEBE
	80s	B1CCCCccce	90s	†
026003	50s	----------e	60s	AAAAAAAAAB
	70s	AAAALELEAA	80s	AAAAAAAAAA
	90s	E		
026004	70s	*EE1BEFEBA	80s	AAAAAB111*
	90s	*		
026005	80s	DeeAAAAAA	90s	E
026006	80s	----eeeeeb	90s	e
026007	60s	-Hccc	70s	fccc*cccc
	80s	------1111	90s	†
026008	80s	------eeee	90s	e
026009	80s	---------H		
026010	80s	----------f		
027001	30s	-----eAAE1	40s	1EBAABCCF1
	50s	111EAAAAAB	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AADAEFCCCC
	90s	B		
027002	30s	--------111	40s	1111111111
	50s	11111EAAAA	60s	AAAAABABAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	A		
027003	50s	----------eE	60s	FEAAAAAAAA
	70s	AAAAABBAEF	80s	AAAAAAAAAA
	90s	A		
027004	60s	eAAAAAAAE1	70s	11EAAAE111
027006	60s	-----eAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	E
027007	50s	---------eA	60s	AAAAAAAAAA
	70s	EBDAAAAAEE	80s	AAAAAAAAAA
	90s	A		
027008	50s	-- - eAAAB	60s	AAAAAAAAAA
	70s	AAAAAEEEAE	80s	AEDEE11111
	90s	†		
027009	60s	-1111111*E	70s	AAABDBAAAD
	80s	ADAAAAAAAA	90s	A
027010	30s	------1c1c	40s	ffffffff
	50s	cffbAAAAA	60s	BAAEAAAAAA
	70s	ABAAAAEEAE	80s	------1111
	90s	†		
027012	50s	-----eAAAAA	60s	AAAAAAAAAA
	70s	AAAE1111**		
027013	50s	-eBBBB8	60s	BBBBBBAAAA
	70s	AAABBBCBFF	80s	B1111*
027014	50s	---------eA	60s	AAAAAAAABA
	70s	EE*111111	80s	---11*1111
	90s	†		
027015	60s	-eAAAAAADA	70s	AAAAAE1**1
	80s	-- 111111*1	90s	†
027018	50s	------eAAB	60s	BBABBBAAAB
	70s	BBbbe--111	80s	---111
027019	50s	------eAAA	60s	AAEBAAAAEE
	70s	EAAAe--111	80s	---111
027021	50s	---------e	60s	dEEAAAAAAA
	70s	AAAAAAE1DA	80s	AAAaaaeAAB
	90s	A		
027022	60s	eAAAAAABAA	70s	EE1111111
	80s	---111-111	90s	†
027023	60s	eAAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAEDAA	90s	A
027024	60s	-eAAAAAAAA	70s	AAAAAAEAAA
	80s	E1-1111111	90s	†
027025	60s	-eAAAAAAAA	70s	AAAE11AAAA
	80s	AAAAAAAAAA	90s	E
027026	60s	---eAAAAAA	70s	AAAAAAAAAE
	80s	AAAAAAAAAA	90s	A
027027	60s	-eAAAAAAEA	70s	AAAAAE1111
	80s	------1111	90s	†
027028	60s	-AAAAAAAAA	70s	AAAAAAAAEA
	80s	AAAAADeeee	90s	e
027029	60s	-eAAAAAAAE	70s	fEAAAAAAAA
	80s	AAEAAAeeee	90s	e
027030	60s	---eAAAAAA	70s	AAAAEEAAFA
	80s	AADAAAAAAA	90s	A
027031	60s	----AAAAAA	70s	AAAAAAEAEA
	80s	AAAAAAAAAD	90s	A
027032	60s	-----1EEAA	70s	AAAAAEEAAA
	80s	AEAAAAAAA1	90s	A
027033	60s	---------f	70s	CCCCCBEAAA
	80s	AAAAAAeeee	90s	A
027034	60s	-------eBA	70s	BAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
027035	60s	---------EA	70s	AAAABABAAA
	80s	EAAAAAAAAA	90s	A
027036	60s	---------fE	70s	EE1111111
	80s	----------f		
027038	70s	EAAAAAAAAA	80s	EAADADAAAA
	90s	A		
027040	70s	EBAAAAAAAA	80s	AAAAAAAAAA
	90s	E		
027041	60s	--111111111	70s	11EAAAAAA
	80s	AAAAAAAAAA	90s	A
027042	70s	11EAAAAAAA	80s	AAAAAAAAAA
	90s	A		
027043	70s	----AAAAAA	80s	EAAAAAAAAA
	90s	A		
027044	70s	--11EAAAAA	80s	AAAADAAAAA
	90s	A		
027047	70s	-1EAAAAAAE	80s	AEADAEDDAA
	80s	A		
027048	70s	-1EAAAEEAA	80s	AAAAAAaedA
	90s	F		
027049	70s	----eAAAAA	80s	AAAAAAAAAA
	90s	A		
027050	70s	fccffffeed	80s	ADDeedAAAA
	90s	A		
027051	70s	--eAAEAAAE	80s	AADAAAAAAA
	90s	A		
027052	70s	------eeee	80s	AAAAAAAAAA
	90s	A		
027053	70s	-----eLAAA	80s	AAAAAAAAAA
	90s	A		
027054	70s	----FFFAAE	80s	AAAAAAAAAA
	90s	A		
027055	70s	----fCCFAF	80s	AADAAAAAAA
	90s	A		
027056	70s	----fFCLAE	80s	AAAAAAAAAA
	90s	F		
027057	70s	----fFCEAE	80s	AAAAAAAAAA
	80s	E		
027058	70s	----fCCEAE	80s	AAAAAAAAAA
	90s	A		
027059	70s	--------eAF	80s	EAAAAAAAAA
	90s	A		
027060	70s	----------e	80s	AAAAAAAAAA
	90s	A		
027061	70s	---------eA	80s	AAAAAAAAAA
	90s	A		
027062	70s	----------e	80s	AEAAAAAAAA
	90s	A		
027064	70s	----------e	80s	eeeeADAAAA
	90s	A		
027065	70s	----------e	80s	eeeeAAAAAA
	90s	A		
027066	80s	----AAAAAA	90s	E
027067	80s	----AAAAAA	90s	A
027068	80s	----eeeeee	90s	e
027069	80s	----AAAAAE	90s	F
027070	80s	-eeeeeeee	90s	A
027071	50s	-----eAAAB	60s	AAAAAAAAAA
	70s	AAAAAEBEAE	80s	AAAAAAAAAA
	90s	A		
027072	80s	----AAAAAA	90s	F
027073	80s	----AAeeeA	90s	A
027074	80s	----AAAAAA	90s	A
027075	80s	---eeeeAAA	90s	A
027076	80s	---eeeeee	90s	A
027077	80s	---eeeeee	90s	E
027080	80s	-----eeAAA	90s	A
027082	80s	--------111	90s	†
027083	80s	--------fcf	90s	†
027084	80s	---------ee	90s	e
027085	80s	----------f		
027086	90s	e		
028001	30s	---cccbAAA	40s	8CCCCCCCCB
	50s	AAAB8AAAAA	60s	AAAAAAAAAA
	70s	AAAAAAFAAA	80s	AAAAAAAAAA
	90s	Ae		
028002	30s	--------eAA	40s	AAAAAAAAAA
	60s	AABAAAAAAA	60s	AAAAAAADEE
	70s	EAAAAEAAAA	80s	AAAAE1111
	90s	†		
028003	50s	-----eAAAA	60s	AAAAAAAAAA
	70s	AAEAAAAAAA	80s	AAE111--1
	90s	†		
028004	50s	------fbAE	60s	EAAEAAAAAA
	70s	AAAAAAAAAA	80s	AAE111

Stn number	Gauged daily flows, monthly peaks and rainfall															
028005	50s	------fccbA	60s	AAAAAAAAAA	028075	70s	----------e	80s	eee---'111	033001	30s	------fcCC	40s	ECCCCCCCCC
	70s	AAAAAAAAAA	80s	AAAAEf		90s	f				50s	FFCCCCCCCC	60s	CCF!!!!!!!
028006	50s	--------eeA	60s	AAAALf!!'1	028079	80s	-eeeeAAAA	90s	Ae		70s	!!!!!!!!!	80s	-------!!!!
	70s	!!!''!!!!!	80s	!!!!!!	028080	50s	--------eAE	60s	EAAFAAAAAA		90s	f		
028007	50s	--------eAA	60s	AAAAAAf'1		70s	AAAAAAAAAA	80s	AAAAAAAAAA	033002	30s	---cCCcCBB	40s	BBBBBCCCCC
	70s	!!!!!!!!'1	80s	!!!!!!		90s	Ae				50s	CCCCCCCCCB	60s	BAAAAAAAAB
028008	50s	- -eAAAAAA	60s	AAAAAAAAAA	028081	80s	--eeebEABA	90s	Ae		70s	BAAAAAAAAB	80s	BAABAABAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	028082	70s	-eeAAAAAAA	80s	AAAAEAAAAA		90s	C		
	90s	Ae				90s	Ae			033003	30s	------fCCC	40s	CCFCFCCCCC
028009	50s	---------eA	60s	AAAAAAAAAB	028083	80s	--eeeeEETE	90s	Ae		50s	BAEABBABCC	60s	BAAAACCAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	028085	30s	-----fFFCC	40s	CCCFCCCCCC		70s	BCCCCCCCCC	80s	CCCCCFFF!!
	90s	Ae				50s	CCCCFCCCCC	60s	CCCCCCCCCC		90s	f		
028010	30s	------fFFCC	40s	CCCFCCCCCC		70s	CCCCBAAAAA	80s	AAAADDAAAA	033004	30s	--fCCC	40s	CCCCCCFFCC
	50s	CCCCFCCCCC	60s	CCCCCCCCCC		90s	Ae				50s	CCCCCBABCC	60s	CCCCCCFCFC
	70s	CCCCBAAAAA	80s	AAAAAAA!!!	028086	70s	-eAAAAAAAA	80s	AAAAEEAAAA		70s	CCCCCFCCCC	80s	CFCCCFFf!!
	90s	f				90s	Ae				90s	f		
028011	50s	---------eE	60s	EEBAAAAAAA	028091	80s	----eeAAAA	90s	Ae	033005	50s	-cbCCCCCCC	60s	BAAAABBCCB
	70s	EEAAAAAAAA	80s	AAAAAAAAAA	028093	80s	------EAAE	90s	Ae		70s	BCBBBBBBCB	80s	BBBBBBEEBB
	90s	Ae			028094	80s	-------!!!!	90s	f		90s	Be		
028012	50s	----------e	80s	AAAAADAAAE	028095	80s	------!!!!	90s	f	033006	50s	------eBCC	60s	BAAAAAABBB
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	028101	80s	---------!!	90s	f		70s	ABAABBABAB	80s	AB8888888A
	90s	Ae			028102	80s	--------EFE	90s	Ae		90s	Ae		
028013	70s	----!!!!!!	80s	---!!!						033007	50s	---eBCCCCC	60s	CCCCCBBBAB
028014	60s	bBABBC!EAA	70s	AAAAAAADf!	029001	60s	eBBAAAAAAB	70s	AAAAAAAAAE		70s	BAAAABAAA	80s	AABBAAAAAA
	80s	!!!!!!!!!!	90s	f		80s	AAAAAAAAAA	90s	Ae		90s	Be		
028015	60s	-----aef!A	70s	EEE!!!!!!!	029002	60s	--eAAAAABA	70s	AAAAADAAAA	033008	50s	----------fc	60s	cbaaabbbf
	80s	--eAEEAAAA	90s	Ae		80s	AAAAAAEAAA	90s	Ae		70s	----------	80s	------!!!!
028016	60s	-----eAAAA	70s	AAAAAAAAEf	029003	60s	--------EA	70s	AAAAAAAAAA		90s	f		
	80s	!!!!!!!!!!	90s	f		80s	AAAAAAAAAA	90s	f	033009	50s	-----eABCC	60s	BAEAAAAABA
028017	60s	------eeee	70s	eeAEAAEAEf	029004	60s	--------EA	70s	AAAAAAAAAA		70s	BABBAAAAAA	80s	BAAABAEfAE
	80s	!!!!!!				80s	AAAAAAAAAE	90s	Ae		90s	f		
028018	60s	-eAAAAAAAA	70s	AAAEAAAAAA	029005	70s	-EAAAAAAAA	80s	AAAAAAEAAA	033011	40s	---------ff	50s	fffcfccff
	80s	AAAAAAAAA	90s	Ae		90s	Ae				60s	eeAAAAAEA	70s	BAAAAAAAAA
028019	60s	---- -eAAD	70s	AAAEAAAAAA	029009	70s	----eAAAAA	80s	AAAAAAAEAA		80s	BAAAAABBA	90s	Ae
	80s	AAAAAAAAAA	90s	Ae		90s	E			033012	60s	eAAAAAAEA	70s	BAAAAAAAAA
028020	50s	----fCFCFC	60s	BAAAAAAEee							80s	AAAAAAAAAA	90s	Be
	70s	eeAAAAAAAA	80s	AAE!!!---1	030001	50s	----------E	60s	AAAAAAAAAA	033013	40s	f	50s	fffccccfff
	90s	f				70s	AAAAAAAAAA	80s	AAAAAAAAAA		60s	eAAAAAAAAA	70s	AAAAAAAAAA
028021	60s	----IEAAEA	70s	EEEEAAAAIf		90s	Ae				80s	AAAABABAAA	90s	Be
	80s	--:!!!!!!!	90s	f	030002	60s	eAAAAAAAAA	70s	AAAAAAAAEf	033014	60s	eAAAAAAAAA	70s	ABAAAAAAAA
028022	60s	---------ee	70s	eeAAAAAAAA		80s	EEEEAEAAIf	90s	I		80s	AAAAAAAAAB	90s	E
	80s	AAAAEf!AAA	90s	Ae	030003	60s	--eAAAAABE	70s	AAAAAAAAAA	033015	60s	--AAAAAAAA	70s	AAAAAAAABB
028023	60s	------eeeee	70s	eeAAAAAEf!		80s	AAAAABEAAA	90s	Ae		80s	DAAAAAEEEf	90s	f
	80s	!!-!!!!!!!	90s	f	030004	60s	--eEABAAAB	70s	AAAAAAAAAF	033016	50s	----------f	60s	bAAEEEFEAB
028024	60s	--------eee	70s	eeAAAAAAAA		80s	AAAAAAAAAA	90s	Ae		70s	BCCCCCCCCC	80s	CCCf!!
	80s	AEEAEEEAAA	90s	Ae	030006	60s	---------ic	70s	ccccccccc	033018	60s	-FAAAAFEA	70s	AAAAAAAAAA
028025	60s	------eeee	70s	eeAAAAAAAA		80s	ccccf--e				80s	BAAABBAABE	90s	Ee
	80s	AAAAE!!!!!	90s	f	030006	70s	----EBBBAA	80s	AEEAAAEAAD	033019	50s	------!!!!	60s	!!eAAAAAEA
028026	60s	------eeee	70s	eeAAEAAAAA		90s	Ee				70s	ABAAAAAAAB	80s	AAAAAABAAA
	80s	AAAAE!!AAA	90s	Ae	030011	70s	-FAAAAAAAA	80s	AAAAAAEDAA		90s	Ae		
028027	60s	-----EAEAA	70s	AAAAAAE!!!		90s	Ae			033020	50s	--------!!!	60s	!! eAEBBEF
	80s	1EAee----!	90s	L	030012	70s	EAAAAAAAAA	80s	DEBABBEEEA		70s	EB888AAAAA	80s	AABAABAAAE
028029	60s	--- -eeee	70s	eeEAAAAEAA		90s	Ae				90s	Ee		
	80s	AAAAF!!!!!	90s	f	030013	70s	-------eAAA	80s	AAAAAAAAAA	033021	60s	--eAAAAAB8	70s	B8BAAAAAAA
028030	60s	-------eEE	70s	AEEAAAAAAA		90s	Ae				80s	BAABABbeeb	90s	Fe
	80s	AAAAE!!!!!	90s	f	030014	70s	--eEAABAAA	80s	BAAAAAAAAE	033022	50s	----------f	60s	ebeeeBAAAB
028031	60s	---------eE	70s	AeAAAAAAAA		90s	f				70s	AAAAAAAAAA	80s	AAAAAAB88A
	80s	AAAAAAAAAA	90s	Ae	030015	70s	------eAAA	80s	AAAAAAeeee		90s	Be		
028032	60s	-----EAAAA	70s	AAAAAAEAAA		90s	Ae			033023	60s	--eAAAAAEA	70s	AABAAAAAAA
	80s	AEAAFf--!!	90s	Ee	030017	70s	--------eA	80s	AAAAAAeeeA		80s	AAAAAABBAB	90s	Be
028033	60s	-----eeeee	70s	eeAAAAAAAA		90s	Ae			033024	40s	- -e	50s	EFBCCCFCCC
	80s	AAEf!!!!!!	90s	f							60s	CCCeAAAAAA	70s	ABAAAAAAAA
028035	60s	--------ee-	70s	----ff'!!!	031001	30s	--------fCF	40s	CCCCCI-----		80s	AAAAAAAAAA	90s	Be
	80s	1EAee----!	90s	E		50s	---fBBBBBB	60s	BBBBBBAAEA	033025	80s	---fEAAAAA	70s	AAEABCF!!!
028036	60s	----------e	70s	eeAEAE!!!!		70s	AABAAAAEAB	80s	BAAAAAeee	033026	70s	fcCCCCCCCC	80s	CCCCCCFfCC
	80s	---!!!--!!	90s	f	031002	30s	----------	40s	----------		90s	'		
028038	60s	----------e	70s	eeAFAAEAAA		50s	----------	60s	fCCCCCCCCc	033027	60s	-----eAABE	70s	BBAAAAAAAA
	80s	AAL!!!'!!	90s	f		70s	CCCCCCCCC	80s	CCCCCCCABC		80s	ABBAAAAABB	90s	Be
028039	60s	- eAF	70s	AeFAFAAAAA		90s	F			033028	80s	------EAEE	70s	ABAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae	031005	80s	---!'!!!!'	90s	'		80s	ABAAAABAAF	90s	Be
028040	60s	---------eE	70s	AAAAAAAAAA	031006	60s	--------EAA	70s	BAAAAAAAAA	033029	80s	-----eAAEA	70s	ABCAAAABAA
	80s	AAAAAAAAAA	90s	Ae		80s	AAAAAAAAE!	90s	'		80s	AAAABABAAA	90s	Be
028041	60s	---------ee	70s	eeAAAAAAAA	031007	60s	---------EE	70s	BBCCCBCBAA	033030	50s	--------fcc	60s	cccf eeee
	80s	AAE'!!!!'1	90s	f		80s	AAAAAAAAAA	90s	F		70s	eebebeeeee	80s	e-----!!!!
028043	60s	----!!!!fEA	70s	ADAAAAAAAA	031010	60s	---------DA	70s	ABAABAAAAA		90s	f		
	80s	AAAAEAAAAA	90s	Ae		80s	AAAAAABAE!	90s	f	033031	70s	-AAABAABAA	80s	AAAAAAETAD
028044	60s	----------e	70s	eeAAAAAAAA	031012	60s	----------E	70s	EEEEEEEEEE		90s	f		
	80s	AAAAE!--!!	90s	fe		80s	EEEeeeF!!!	90s	f	033032	60s	-----EAAAA	70s	AAAAABAAAA
028045	60s	-----eeeee	70s	eeAAADAAAA	031016	60s	----------E	70s	ABAAAAAAAA		80s	AAAAAAAAAA	90s	Ae
	80s	AAAAE1--11	90s	f		80s	AAAAAAAAE'	90s	f	033033	70s	- EAAAAAA	80s	AAAAAAABAA
028046	60s	----------e	70s	AAAAAAAAAA	031021	70s	eEAEEBBFAA	80s	AEEEEEEFE1		90s	Ae		
	80s	AAAAAAAAAA	90s	Ae		90s	f			033034	60s	--------fFA	70s	AAAAAAAAAA
028047	70s	eeeeAAAAAA	80s	AAEEE!--!'	031023	70s	--EBABBBA8	80s	AAAAAAAAEf		80s	AAAAAAAAAB	90s	Be
	90s	fe				90s	1			033035	50s	----- - fC	60s	CCCCCCCCCC
028048	70s	-eeAAAAAAA	80s	AAAAAAAAAA	031025	70s	---------eA	80s	EAAAAAABEf		70s	CCCCCCCf!!	80s	!!!!!!fCF!
	90s	Ae				90s	1				90s	f		
028049	70s	eeeeeeeAAA	80s	AAAAE!!!!'	031028	70s	-f!'!!!!fEA	80s	AAAAAAAAE!	033037	60s	F	70s	ABAAAAAAAA
	90s	Ee				90s	1				80s	AAAAABBBAB	90s	Be
028050	70s	-eeeAAAEAA	80s	AAAAE!!fC	031028	80s	--fbeeAAEf	90s	f	033038	70s	--EAAAOBAA	80s	AABBABABBE
	90s	Be									90s	Be		
028052	70s	-eOLAAAAAA	80s	AAAAE!1AAA	032001	30s	----------1	40s	eBAAAAAAAA	033040	60s	-----ffff	70s	CBAAAAAAAA
	90s	Ae				50s	ABAAAAAAAB	60s	BAAABAABCC		80s	AAAABBeeee	90s	Be
028053	70s	---'!!EAAA	80s	AAALf!---1		70s	BAAABBCCAA	80s	BAAAAAAAFF	033044	60s	--------fcc	70s	ccCABBAAAA
	90s	Ee				90s	E				80s	ABAAAABBBA	90s	Be
028054	70s	-eAAAAAAAA	80s	AAAAEf'!!!	032002	30s	--------eA	40s	AABABABABA	033045	60s	--------fcc	70s	ccCAAAAAAA
	90s	f				50s	BABABBAAAB	60s	AABBAAAAAA		80s	BABAAABBAA	90s	Be
028055	70s	-eAAAEAAAA	80s	AAE!!!!!!!		70s	BAAAAAAAAA	80s	AAAAAAAAE!	033046	60s	- -fcc	70s	cCCAABAAAA
	90s	f				90s	f				80s	BAAAABBAAA	90s	Ae
028056	70s	eAAAAEA	80s	AAAAEf!AAA	032003	30s	---------eA	40s	ABBAABAAAB	033048	60s	----------f	70s	cccAAAAAAA
	90s	Ae				50s	AAAAABABAB	60s	BBAABEAAAA		80s	BBBAAAeAAAA	90s	Be
028058	70s	- !!EAAAAA	80s	AAAAE!!!!!		70s	AAAAAAAADA	80s	AAAAAAAAEA	033049	70s	---eeeeee	80s	e !!!!
	90s	f				90s	E				90s	f		
028059	60s	------eeee	70s	eeAAAAAAAA	032004	40s	---eAABAAA	50s	AAAAAAAAAB	033050	60s	fffffccc	70s	f. FCCCCC
	80s	AAALE!--!!	90s	f		60s	BBBAEEAAAB	70s	AAAAAAFAAA		80s	BCCBeeeeeb	90s	Ae
028060	70s	--eeAAAAAA	80s	AAAEE!!!FF		80s	AAAAAAABAA	90s	Ae	033051	80s	----fCCCCC	70s	CAAABAAAAA
	90s	Fe			032006	30s	----------e	40s	BAAABAABAA		80s	AAAAAAEfAD	90s	f
028061	70s	--!!-AAAAA	80s	AAAAE!1AAA		50s	ABAAAAB888	60s	B888AAAAAb	033052	60s	-f--ccc-ccc	70s	caeeAAAABA
	90s	Ae				70s	ccccccCCC	80s	CccccCAAA		80s	AAABAAe-af	90s	f
028062	70s	-----!!!!!	80s	!!!!!!		90s	Ae			033053	40s	-- ----f	50s	ffccccccc
028065	70s	-----!!!!!	80s	---!!!	032007	30s	----------e	40s	AAAAABAABA		60s	ccefcffbcc	70s	cccccccccc
028066	70s	---eAAAAAA	80s	AAAAAEAAAA		50s	ABAABABAAA	60s	BBAAAABAAb		80s	ccbeebee		
	90s	Ae				70s	ccccccCCC	80s	BccccCAAA	033054	70s	------fCAA	80s	AARAABeeee
028067	70s	---eAAAAAA	80s	AAAAAAAAAA		90s	Ae				90s	Ae		
	90s	Ae			032008	40s	-----eAAAB	50s	ABAAABABAA	033055	50s	---fcccf--	70s	------fBAA
028070	60s	----!!!!!	70s	eeeeeeeee		60s	BBBBBAEABA	70s	AAAAAAAAAA		80s	AAAAAAeebA	90s	Ae
	80s	AAE!!!!!!!	90s	f		80s	AAAAAAAAAA	90s	Ae	033056	60s	-----ccffc	70s	cfcfffCCCB
028072	70s	-----EAAAA	80s	AAAEE!!!!!	032029	70s	---eeeeeee	80s	----------f		80s	BAAAAAe-eb		
	90s	f				90s	1			033057	70s	------fBAA	80s	AAAAAAe-eb
028073	70s	------eeee	80s	eeeee	032031	80s	--eeeeEEEE	90s	f					

Stn. number	Gauged daily flows, monthly peaks and rainfall			
033058	70s	-------t1EA	80s	AAAAaaaaaD
	90s	1		
033059	60s	----------c	70s	ocfcaccccc
	80s	ccccas		
033080	60s	----------f	70s	ccccccccc
	80s	cccccf		
033082	60s	----fcf---	70s	---------fc
	80s	ccccbBe-ab		
033083	80s	aAAabAABAA	90s	Ae
033084	80s	aaaabae-as		
033085	80s	fCCcaAE1BE	90s	t
033086	80s	-aAaaBBAAA	90s	Be
033087	80s	--aaaAETAt	90s	t
033088	80s	--fcbBe-a		
034001	60s	----------e	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ee		
034002	60s	--------aAA	60s	AAAAAAAAAA
	70s	EAAAAAAAAA	80s	AEBAAAAAAE
	90s	Ee		
034003	60s	----------e	60s	AAAAAAAAAA
	70s	AAAAAAAAAB	80s	AABAAAAABA
	90s	Be		
034004	60s	aAAAAAAAAA	70s	AAAAAAAAAB
	80s	ABAAAABEC	90s	Cf
034005	60s	-aAAAAAAAA	70s	AAAAAAAAAB
	80s	ABAAAAAEAB	90s	Fe
034006	60s	---aAAAbAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Fe
034007	60s	------aAAB	70s	AAAAAAAAAA
	80s	AAAAAAAAEE	90s	Ee
034008	60s	------EABA	70s	AAAEEAAAAF
	80s	FCFOBBBEED	90s	Ff
034010	60s	--------EA	70s	AAAAAAAAAA
	80s	EABAAEAAAE	90s	Ee
034011	60s	--------AAA	70s	ABAABAABBE
	80s	ABAAAAAABA	90s	Ef
034012	60s	------aAAA	70s	AADABAAAAA
	80s	AAAAAAAABA	90s	Ae
034013	70s	--EEEAEADB	80s	ADEDDF11EE
	90s	Ae		
034014	60s	----------f	70s	cfccfccHc
	80s	ccHcbCAA1	90s	E
034018	70s	--FFCCADDE	80s	AAAAAEAEA1
	90s	E		
034019	70s	----LAAAAA	80s	AAAAAAAAB1
	90s	E		
035001	60s	-111FEE111	70s	11111FFCFE
	80s	befebebbe		
035002	60s	----aAAAA	70s	AAAABAEAAB
	80s	AAAAAAABAE	90s	Ea
035003	60s	-aAAAAAAAA	70s	ABAAAAAAAA
	80s	ABBAAAaaaA	90s	Ef
035004	60s	-----EAAAA	70s	AAAAAAAAAB
	80s	ABBAAAAAAE	90s	Ea
035008	60s	----fEAAA	70s	AAAAAAAAAA
	80s	ABBAAAAAFB	90s	Be
035010	60s	----------e	70s	AAAAAAAAAF
	80s	ABBAAAaabb	90s	ee
035013	60s	----------f	70s	FAAAAAAAAB
	80s	ABAAAAAAEE	90s	Fe
038001	20s	--------CC	30s	1FCCCCCCCC
	40s	CCCCCCCCCC	60s	CCCCCCBAAA
	60s	BBBAABAAAA	70s	BBBBABCCCC
	80s	CCCCCCF1FF	90s	1
038002	60s	aAABAAAABA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038003	60s	1BAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038004	60s	-----fBAAA	70s	AAAAAAAAAA
	60s	AAAAAAAAAA	90s	Ae
038005	60s	--aBAAAAAA	70s	AAAAAAAAAA
	80s	AAABAAAAAA	90s	1e
038006	60s	--aBABAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038007	60s	fCCFBOABAA	70s	AAAAAAAAAA
	80s	AAAAAB1AAA	90s	Ee
038008	60s	EAAAABAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038009	60s	--------EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038010	60s	--------EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038011	60s	--------EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAB	90s	Ae
038012	60s	--------EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038013	60s	1111111111	70s	1EEEEEEEFF
	80s	FFFFFFfFef	90s	H
038015	70s	--EAAAAAAA	80s	AAABAAAEAA
	90s	Ae		
038016	70s	eeeeeeee		
038017	70s	-eBeeeeee	80s	bee
037001	50s	aAAAAAAAAA	80s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
037002	30s	--FCCCCB88	40s	BBABABABAA
	50s	BBBBBBBf8R	60s	BFBRABRBAA
	70s	BAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
037003	30s	--FCCCCCCC	40s	CCCCCCCCCC
	50s	CCCCCCCCCC	60s	CCCBAAAAAA
	70s	AAAAAAAAAA	80s	AAAAABAAAA
	90s	Ae		
037004	30s	--fccccccc	40s	cccccccccc
	50s	cccccccccc	60s	cccccccf-
	70s	----------	80s	----------
	90s	1		
037005	60s	----------e	60s	AAAABAAAAB
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
037008	60s	--aAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAE	90s	Af
037007	60s	-----aBAAAA	70s	AAAAAAAAAA
	80s	AAAABAAAAA	90s	Ae

Stn number	Gauged daily flows, monthly peaks and rainfall			
037008	60s	-----aAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
037009	60s	--aAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
037010	60s	--aBAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
037011	60s	---aAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAB	90s	Ae
037012	60s	---aBAAAAA	70s	AAAAAABAAA
	80s	AAAABAAAAE	90s	Fe
037013	60s	---aAAAAAA	70s	AAAAAAAAAA
	80s	AAAABAAAAA	90s	Ae
037014	60s	---fCBAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
037015	70s	--------e1F	80s	FEAAAAAAAA
	90s	Ae		
037016	60s	---- FAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
037017	60s	------- E	70s	AAAAAAAAAA
	80s	AAAAAAAAAE	90s	fe
037018	70s	EAAAAAAAAA	80s	AAAAABAAAA
	90s	Ae		
037019	60s	-----EAAAE	70s	AAADAABEEA
	80s	AAAAAAAAAA	90s	Ae
037020	60s	----------1	70s	EAAAAAAAAA
	80s	AAAABAAAAA	90s	Ae
037021	60s	----------1	70s	EAAAAAAAAA
	80s	AAAAAAAEAE	90s	Ae
037022	60s	----------1	70s	EAAAAAAAAB
	80s	AAAABBBAAF	90s	Ae
037024	70s	-EAAAAAAAA	80s	AAABBBAEAA
	90s	Ae		
037025	60s	-----CBAAE	70s	EEEE111----
	80s	---1--111*	90s	1
037028	60s	-ebeeebeee	70s	aaaeeee
037027	60s	feeeeebeee	70s	ee
037028	60s	feeeeebeee	70s	aaaeeee
037029	60s	eeeeebeee	70s	baeeeee
037030	60s	--EEEBBAAB	70s	e----------
	80s	------1111	90s	1
037031	70s	------eBAA	80s	AAABAAAE11
	90s	1		
037033	70s	-----aAAAA	80s	AAAAAEaaae
	90s	Ae		
037034	70s	----feeaaa	80s	aaedeaaaee
	90s	ee		
037036	70s	-beeeeeee	80s	aeeeeee
037037	80s	-aebbeEEEB	90s	Be
037038	50s	-aaaa--ee	80s	beeebebbeb
	70s	ebbee		
037039	70s	---feeebel	80s	EEEEEEeaee
	90s	ee		
038001	70s	----------f	80s	ceeefeeeef
	90s	ceeeefeee	00s	ceefeeeeee
	10s	ceeeeeeeee	20s	eeeeeeeeee
	30s	eeeeeeCCC	40s	CCCCCCCCCC
	50s	CCCCCCCCCC	60s	CCCCCAAAAB
	70s	BAAABCF1FA	80s	AAAAAAAAAA
	90s	Ae		
038002	80s	aaaaaabeA	90s	Ae
038003	50s	--aAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
038004	70s	----------e	80s	AAAAAAAAAA
	90s	Ae *		
038005	30s	------1111	40s	1111*11111
	50s	11111------	60s	EAAAABABAA
	70s	AAAAAAAAAE	80s	EE1111
038008	50s	------fCCC	60s	CBAAAAAABA
	70s	AAAABAAAAA	80s	EEE
038007	50s	-----EAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
038011	50s	--------fCC	60s	CCCCCB8888
	70s	BABBBBBAAA	80s	AAAAE1
038012	50s	----11	60s	1111111111
	70s	1111EAAAAA	80s	AAAAAAaaae
	90s	ee		
038013	30s	-----11111	40s	1111111111
	50s	1111------	60s	eaebbbaaae
	70s	aaaaebaae	80s	AAAAABaaae
	90s	be		
038014	50s	------aCCC	60s	CCCCCCCCCC
	70s	CCCCCCBAAA	80s	EAAAAAAAAA
	90s	Ae		
038015	60s	----------E	70s	AAAABAAAAA
	80s	A1e		
038016	60s	----------f	70s	CCBBBCCCBA
	80s	AABCCCccba	90s	ee
038017	70s	eBAAAAAAAA	80s	AAAAAAaaae
	90s	ee		
038018	70s	-aAAAABAAA	80s	AAAAAAAAAA
	90s	Ae		
038020	70s	-EAAAAAAAA	80s	AAEEAAAAAA
	90s	Ae		
038021	70s	-aAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
038022	70s	--fCCCAAAA	80s	AAAAAAAAAA
	90s	Ae		
038024	70s	---EAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
038026	70s	--- EAAAAA	80s	AAAAAAAAAA
	90s	Ae		
038027	80s	-----edede	90s	ee
038028	70s	------eEAA	80s	AAAAAAAAAA
	90s	Ae		
038029	70s	---------eA	90s	AAAAABAAAA
	90s	Ae		
038030	70s	----------e	80s	AAAAAAAAAA
	90s	Ae		
039001	80s	---cCCCCCC	90s	CCCCCCCCCC
	00s	CCCCCCCCCC	10s	CCCCCCCCCC
	20s	CCCCCCCCCC	30s	CCCCCCCCCC
	40s	CCCCCCCCCC	50s	CCCCCCCCCC
	60s	CCCCCCCCCC	70s	CCCCCBAAAA
	80s	BBAAAAAAAA	90s	Ae

Stn number	Gauged daily flows, monthly peaks and rainfall			
039002	30s	---------fC	40s	CCCCCCCCCC
	50s	CCCCCCCCCC	60s	CCCCCCCCCC
	70s	CCCCCCCCCC	80s	CCCCCCCCCC
	90s	Cf		
039003	60s	--aAEEEEE	70s	aEEAEEEEDA
	80s	AAAAAAaaae	90s	Ae
039004	30s	------aFEA	40s	AAF11EEFF1
	50s	1111EAAAAA	60s	AAAAEAEEEE
	70s	1EEAEEAF1E	80s	EEEEAAAAAA
	90s	Ae		
039005	30s	-----aAAE1	40s	1111111111
	50s	1111EAAAAA	60s	EEAEFEEEEE
	70s	EEEAEEEEEA	80s	AEEBBAAAAA
	90s	Ae		
039006	50s	aAAAAAAAAA	80s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAADA
	90s	Ae		
039007	50s	--aAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039008	50s	-fCCCCCCCC	60s	CCCCCCCCCC
	70s	CCCCCCCCCC	80s	CCCCCCCCCC
	90s	Cf		
039010	50s	--aAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAaAAA
	90s	Ae		
039011	50s	----aAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039012	50s	------EAAA	80s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAEEEAAEAA
	90s	Ae		
039013	30s	----aAAAAA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAEA	80s	AAAAAAaAAA
	90s	E		
039014	50s	------aAAA	80s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039016	60s	---aAAAAAA	70s	AAAAAAABCB
	80s	AAAAAAAAAA	90s	Ae
039018	60s	-aAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039017	60s	--aAAAAAAA	70s	AAAAAAAAAA
	80s	AEEAAETEEE	90s	Ee
039019	60s	--EAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039020	60s	---aAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039021	60s	-----EAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039022	60s	-----aAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039023	60s	----aAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039025	60s	-------aAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039026	60s	------aAAA	70s	AAAAAAAAAA
	80s	AAAAAAAFFA	90s	Ae
039027	60s	--------eA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039028	60s	--------EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039029	60s	-------1EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039030	70s	FAAAAAAAAA	80s	AAAAADeAAA
	90s	Ae		
039031	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAE*1111*	90s	f
039032	60s	------eAAA	70s	AAAAAAAAAA
	80s	AAAE:11111	90s	t
039033	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039034	70s	eAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039035	60s	--------1E	70s	AAAAAAAAAA
	80s	AAAAAAaaae	90s	ee
039036	60s	--------eA	70s	AAAAAAAAAA
	80s	AAAAAEDAAA	90s	Ae
039037	70s	-1EAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039038	60s	--------eA	70s	AAAAAAAAAA
	80s	AAEEBEEDAA	90s	Ae
039040	70s	-1EAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039042	70s	--EAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
039043	60s	--eEAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039044	70s	--eAAAAAAA	80s	AAAAaeAAAA
	90s	Ae		
039046	70s	---eAEEEFA	80s	E111EDddaD
	80s	De		
039049	70s	---EEE11fE	80s	DAABEAAAAA
	90s	Ae		
039051	60s	-------EAA	70s	AAAAAAAAAA
	80s	AAFAAAAAF1	90s	1
039052	50s	-------eAA	60s	FdAAAAAAAA
	70s	aaaaaaaaa	80s	AAAAAAAAAA
	90s	Ae		
039053	60s	-aAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039054	60s	-aAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
039055	70s	----------e	80s	EEEAAAAAAA
	90s	Ae		
039056	70s	--------eee	80s	eeeeeeeeeA
	90s	Ae		
039057	70s	---------ee	80s	deeeeeeeeA
	90s	Ae		
039058	70s	---------ee	80s	deeeeeeeeA
	90s	Ae		
039061	70s	-eeeeeeee	80s	eeceedDE88
	90s	F		
039065	70s	eeeeee---	80s	ebeebbAA88
	90s	F		
039068	70s	-aAAAAE1EA	80s	AAAAAAAAAA
	90s	Ae		

Stn number	Gauged daily flows. monthly peaks and rainfall			
039069	70s	--eAE1EAAA	80s	AAAAAAAAAA
	90s	Ae		
039071	70s	----------e	80s	eeeeeeeede
	90s	ee		
039072	70s	----------e	80s	eddddeddede
	90s	De		
039073	70s	----------e	80s	aeaaaaAAAA
	90s	Ae		
039074	80s	aaaaaAAAA	90s	Be
039075	80s	eaaaaaADDD	90s	Ee
039078	70s	------eaaa	80s	aaaaaaAAAA
	90s	Ae		
039077	80s	eaaaaaAAAA	90s	Ae
039078	70s	--------ee	80s	aaaaaaAAAE
	90s	Ae		
039079	70s	----------f	80s	fferleddaee
	90s	Ae		
039081	60s	--eAAAAAAA	70s	AAAAAAAAFe
	80s	AAAaaeAAAA	90s	Ae
039085	30s	-------eeee	40s	aee--------
	50s	----eeAAAA	60s	e
039086	70s	-----eAAAA	80s	AAAeAAaaaa
	90s	de		
039087	70s	----eAAAAA	80s	eAAAAAeAAA
	90s	Ae		
039088	70s	----eAeAAA	80s	AAAAABAAAA
	90s	Ae		
039089	70s	-----eeeee	80s	aeeeeeeheA
	90s	Ae		
039090	80s	-----e-1EA	90s	Ae
039091	70s	---------ee	80s	aaaaae1111
	90s	1		
039092	70s	----------e	80s	eeeeeeEAAA
	90s	Fe		
039093	70s	---------ee	80s	aeeeeeeeee
	90s	Ae		
039094	70s	--------fee	80s	beeeeeeeee
	90s	ee		
039095	70s	---------ee	80s	aeeeeeeeee
	90s	Ae		
039096	70s	----------e	80s	eeeeeeeeee
	90s	Ae		
039097	80s	fccccCCCC	90s	Cf
039098	80s	----edeiaee	90s	De
039099	80s	---eeeeeee	90s	ee
039100	80s	----eeddee	90s	be
039101	80s	--eeeeAAAA	90s	Ae
039102	80s	----edeeieA	90s	Ae
039103	80s	----------e	90s	Ae
039104	80s	---------ee	90s	De
039105	80s	----------e	90s	De
039106	80s	---------ed	90s	De
039107	90s	ee		
039108	90s	ee		
039109	90s	ee		
039110	90s	-e		
039111	90s	ee		
040001	50s	---EAAAAAA	60s	AAAAABAE1:
	70s	11'1111111	80s	1'1---1111
	90s	1		
040002	50s	------eAAA	60s	AAAAAAAAEA
	70s	BBAAAe-1'1	80s	1'1---1111
	90s	1		
040003	50s	------eAAA	60s	AAAAABEEFF
	70s	FFC9CCCCCC	80s	BBBAAACCCC
	90s	C1		
040004	60s	--eAAAAFEB	70s	AAAAAFAAAE
	80s	AAAAADAAAA	90s	Ae
040005	50s	---------aA	60s	AAAAAAAABB
	70s	AAAEAEAAAE	80s	AAAAADDOAD
	90s	Ae		
040006	50s	----------e	60s	AAAAAAABEB
	70s	AABEDEAEEE	80s	FFE11'1FFD
	90s	De		
040007	60s	eAAAAAEEEA	70s	AAAAAAAAAE
	80s	DEAAAAAADA	90s	Ae
040008	60s	--eEAAAABA	70s	AAAABEAAEE
	80s	AADAAADDDA	90s	Ae
040009	60s	-eABBBAABA	70s	AAAAAABAAA
	80s	AAAAAAAAAA	90s	Ae
040010	60s	-eAAAAAAEA	70s	AAEAEBDDAA
	80s	DADAAADDDD	90s	Ae
040011	60s	----eAABAA	70s	AAAAABABAA
	80s	BADDAAAAAA	90s	Ae
040012	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
040013	60s	---------1E	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	De
040014	70s	-e1EEEEDEE	80s	DEDEEAAAAA
	90s	Ae		
040015	60s	----------F	70s	DDAAAAAAAE
	80s	DDEADDEAAA	90s	Ae
040016	60s	---------1E	70s	AAAAAAAAAA
	80s	AAAAAAaaaA	90s	De
040017	70s	-BEAEEB8DE	80s	EEDEE1DEAD
	90s	Ae		
040018	60s	--------11E	70s	AAAAAAAAAA
	80s	AAAaaeAAAA	90s	Ee
040020	70s	---eEAEEDE	80s	EEAE1111AAD
	90s	Ae		
040021	70s	-----EFEAE	80s	DDEDE1:1111
	90s	Ee		
040023	70s	------deeA	80s	ADDAFEDDDD
	90s	Ae		
040024	70s	----eEEEAA	80s	EF1::::::::
	90s	:		
040027	70s	-----fff-	80s	eddadaedde
	90s	ae		
041001	50s	eaAaaAAAAA	60s	AAAAaAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
041002	50s	-eAAAAAAAA	60s	AAAAAAAAAD
	70s	AAABAAAAAA	80s	ADDDDDDAAA
	90s	Ae		
041003	50s	----------e	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	DDDDDDDDDA
	90s	Ae		
041004	50s	------eAAA	60s	AAAAAAAAAA
	70s	ABBBAAAAAE	80s	1FCCFCCCCC
	90s	Cf		
041005	60s	eAAAAAAAAA	70s	AAAAAAAAAA
	80s	AADDAAAAAA	90s	Ae
041006	60s	----eBAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
041008	50s	---------F	60s	CCCCCCCCCC
	70s	CCCCCCF111	80s	---------1
	90s	'		
041010	60s	-eEAEADDAA	70s	ABEDDDDDDA
	80s	DDDADADDAD	90s	Ae
041011	60s	-------EAAA	70s	AAAAAAAAAA
	80s	ADADAAAAAA	90s	Ae
041012	60s	-------1EAA	70s	AAAAAADAA
	80s	ODAADDAAAA	90s	Ae
041013	50s	eAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	DDAEDDDAAA
	90s	Ae		
041014	70s	eADAAAADAD	80s	AAADDAADAA
	90s	Ae		
041015	80s	--------EAA	70s	DAADDDADDD
	80s	ODAAAAAAAA	90s	Ae
041018	30s	---------F	40s	fFFFFFFFF
	50s	FFFFFFFFF	60s	FFFFFFEAA
	70s	AAAAAAAAAD	80s	AAAAAAAAAA
	90s	Ae		
041017	60s	----------e	70s	AAFAAAADA
	80s	AAAAAAAAAA	90s	Ae
041018	60s	----------e	70s	AABAAABAAA
	80s	DAAADAAAAB	90s	Be
041019	70s	eAAAAAAAAA	80s	AAADAAAAAA
	90s	Ae		
041020	60s	----------e	70s	AABAAAAAAA
	80s	AAADAAAAAA	90s	Ae
041021	60s	----------e	70s	EBABAABBED
	80s	AABBBABAAB	90s	Be
041022	70s	eAAAAADDDD	80s	AAAAAAAAAA
	90s	Ae		
041023	70s	fBBCBBBBBB	80s	BBEBLBbebc
	90s	be		
041024	70s	-EAAAAABBA	80s	DAAAADAAA
	90s	Ae		
041026	70s	-EAAAADDOA	80s	DAAAADAAAA
	90s	Ae		
041026	70s	-EAAAADAAA	80s	AAADAAADAA
	90s	Ae		
041027	70s	--eAAAAADD	80s	DAAAAAAAAA
	90s	Ae		
041028	60s	----eEEAAA	70s	AAAAAAAAAD
	80s	DADDDADAAA	90s	Ae
041029	80s	---edaAAAA	90s	Ae
042001	50s	-fCCCCCCCC	80s	CCCCCCCCCC
	70s	CCCCCBDAAA	80s	AEDAAAAAAA
	90s	Ae		
042002	50s	----------f	60s	1'1111'111
	70s	11----111-	80s	1'1
042003	60s	fCCCCCCCCC	70s	CCCCCCBAAA
	80s	DAAAAAAAAA	90s	Ae
042004	50s	--------fCC	80s	CCCCCCCCCC
	70s	CCCCCCCCCC	80s	FCCCCCCCCC
	90s	Cf		
042005	50s	-----fCCCC	60s	CCCCCCCCCC
	70s	CCCCCFCFFF	80s	FCCCCEDAB
	90s	Ee		
042006	50s	---------fC	60s	CCCCCCCCCC
	70s	CCCCCBAAAA	80s	AAAAAAAAAA
	90s	Ae		
042007	70s	cCCCCFCCCc	80s	cfccccCCCC
	90s	Cf		
042008	70s	FCCCCBAAAA	80s	AAAAAAAAAA
	90s	Ae		
042009	70s	fCCCCBAAAA	80s	AAAAAAAAAD
	90s	Ae		
042010	50s	---------fC	80s	CCCCCCCCCC
	70s	CCCCCCCCCC	80s	CCCCcCCCCC
	90s	Cf		
042011	70s	--fCCBAAAA	80s	AAAAAAaeeA
	90s	Ae		
042012	70s	---11BBBBC	80s	CCCCCCCCCC
	90s	Cf		
042014	60s	---------11	70s	11111fEAAA
	80s	AAAaeeAAAA	90s	Ae
042015	70s	----------e	80s	eiaaedaeee
	90s	De		
042016	70s	-----fcff	80s	cfcf------
	90s	1		
042017	80s	--------eed	90s	ae
042018	80s	--------eee	90s	Ae
042020	70s	--------eee	80s	aeaeeeeeee
	90s	Ae		
042021	70s	----------1	80s	fee
043001	60s	eAAAAE1111	70s	1111111111
043003	60s	---fcfCFCC	70s	CCCCCCCCCC
	80s	CCCeCCCCFC	90s	Ae
043004	60s	-----EAEAA	70s	AAAAAFAAAA
	80s	BEEEEBEDEB	90s	Ae
043005	60s	-----EAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAABA	90s	Ae
043006	60s	-------AAAA	70s	AAAAAAAAAA
	80s	AAAAAABBBA	90s	Ae
043007	70s	--tAAAAAAA	80s	AAAAAAABAA
	90s	Ae		
043008	60s	--------AAA	70s	AABAAAAAAA
	80s	AABAAABBBA	90s	Ae
043009	60s	---------eA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
043010	60s	----------1	70s	EAAAAAABAA
	80s	AA1111-----	90s	11
043011	70s	Eeeeffffff	80s	------1111
	90s	1		
043012	60s	------1111	70s	1EAAAAABAA
	80s	AAABABAAEB	90s	Ae
043013	60s	----------1	70s	1LBABBBAAA
	80s	AEEE111111	90s	1
043014	60s	-------1111	70s	1EAAAAAAAA
	80s	AAAAAAAEAA	90s	Ae
043015	60s	---- -1111	70s	1F1F1FFF111
	80s	----------'	90s	1
043017	60s	------1111	70s	1EAAAAAAAA
	80s	AAABABBBEA	90s	Ae
043018	70s	----eAAAAA	80s	AAAAAAbbbb
	90s	ae		
043019	70s	EAAAAAA	80s	AABAABaabB
	90s	Ae		
043021	70s	-----B8BAB	80s	BBBCCCCCFC
	90s	Ff		
044001	60s	-fccc-cccC	70s	CCCCCCCccc
	80s	ccccCCCCCC	90s	Cf
044002	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAEAA	90s	Ae
044003	60s	------EAAA	70s	AAAAABBAAA
	80s	e-----1111	90s	1
044004	60s	----------f	70s	cfCCCECccc
	80s	ccbcB8CCCC	90s	Ae
044006	80s	-------111E	70s	AAAAABBAAA
	80s	AAAAABB8CB	90s	Ae
044008	70s	---1EEAAAA	80s	AD:1111111
	90s	1		
044009	70s	-----eAAAA	80s	ABAABBABEB
	90s	Ae		
045001	50s	------eAAA	60s	AAAAAAAAAA
	70s	AAAAABAAAA	80s	AAAAAAAAAA
	90s	Af		
045002	60s	-eAAAAAAAB	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
045003	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
045004	60s	----eAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAABA	90s	Af
045005	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
045006	60s	----eeAE11	70s	1111111111
045008	70s	--11EAAAAA	80s	ABAAAAAABA
	90s	Af		
045009	80s	-AAeeeACCA	90s	Af
045010	70s	---cccccc	80s	------1111
	90s	1		
045011	60s	--- - cf	70s	-----fcccc
	80s	cf----1111	90s	1
045012	60s	----fcfccc	70s	ccccccccc
	80s	cccccAA11	90s	1
048002	50s	------eAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAA1A
	90s	Af		
048003	50s	-1 --eA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Af		
048005	60s	----EAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAACA	90s	Af
048006	70s	----AAAAAA	80s	AAAAAAAACA
	90s	Af		
048007	70s	--eAAAAAAA	80s	AF--- 1111
	90s	1		
048008	70s	-eeeeeeee	80s	aF----1111
	90s	1		
047001	50s	------eAAA	60s	AAAAAA8888
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Af		
047003	50s	-------eBE	60s	1111111111
	70s	1111EEEAAE	80s	E11111
047004	60s	---eAAEAEA	70s	AAAAAAAAAA
	80s	AAAAAAAACA	90s	Af
047005	60s	---eAAAAAA	70s	AEE111111EA
	80s	AF----111'	90s	'
047006	60s	---eAAEAEE	70s	EE111EAAAE
	80s	AF----1111	90s	1
047007	60s	---eAAABAA	70s	AAEEAAAAAA
	80s	AAAAAAAAAA	90s	Af
047008	60s	----------e	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
047009	60s	----------E	70s	AAAAAAAAAB
	80s	AAAAAAAAAA	90s	Af
047010	70s	-1EAAAAAAA	80s	AAAAL1AACA
	90s	Af		
047011	70s	-EAAAAAAAA	80s	Af----11'1
	90s	1		
047013	70s	--fDAAAAAA	80s	AAAAAAAACA
	90s	Af		
047014	80s	-aaaaeAACF	90s	1
047015	80s	-eeeee1111	90s	1
047018	70s	------fccf	80s	ffffccCC11
	90s	1		
047017	70s	-------fcc	80s	ccccccA111
	90s	1		
048001	50s	-------eAA	60s	AAAALAAEEE
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Af		
048002	60s	-FcbAAABBA	70s	AAABABFccc
	80s	fcfcf-1111	90s	1
048003	70s	---------fc	80s	cAABAAAAAA
	90s	Af		
048004	60s	-- -----e	70s	AAAAAAAAAE
	80s	AAAAAAAAAA	90s	Af
048005	60s	------ EA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
048006	60s	------- EA	70s	AAAAAAAAAA
	80s	AAAAABAACF	90s	1
048007	60s	---------EA	70s	AAAAAAAAAA
	80s	AAAAAAAACA	90s	Af
048009	70s	tEAAAAAAAA	80s	A1111:1111
	90s	1		
048010	50s	- -- - ff-	60s	----------f
	70s	cCBAAAAAAA	80s	AAAAAAAAAA
	90s	Af		
048011	60s	-FcbAAABBA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af
049001	60s	----eAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Af

Stn. number	Gauged daily flows, monthly peaks and rainfall			
049002	50s	-------EE1	60s	!1111111EA
	70s	AAABAAAAAA	80s	AAAAAAAAAA
	90s	A!		
049003	60s	--------eEB	70s	CBEEEAAADA
	80s	AAAAAAAACA	90s	A!
049004	60s	----------E	70s	AAAAAAAAAA
	80s	AAAAABDAAA	90s	A!
050001	50s	---------eA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	A!		
050002	60s	--eAAAAAAA	70s	BAAAAAAAAA
	80s	AAAAAAAAA	90s	A!
050004	60s	------eE111	70s	111111'111
	80s	---111		
050005	70s	-----fcccc	80s	ccccccaAFA
	90s	A'		
050006	60s	-----deeee	70s	eeeeeeeee
	80s	eeeeeeTTAA	90s	A'
050007	70s	---'cccccc	80s	cccfccCF11
	90s	1		
051001	60s	-------AAA	70s	AAAAAAAAAA
	80s	AAAEeeAAAA	90s	Ae
051002	70s	---eeeeede	80s	-----eAABA
	90s	Ae		
051003	60s	------febb	70s	bbbbeebfee
	80s	e--eeeAAAA	90s	Ae
052001	50s	------eeee	60s	eeeeebAAE1
	70s	1111---111		
052002	50s	------eAAB	60s	BBBBBBAAe-
	70s	--------111		
052003	60s	-eBAAAAAAA	70s	AAAAAAAAAA
	80s	AEAAAAAAAA	90s	Ae
052004	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
052005	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
052006	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
052007	60s	------eAAA	70s	AAAAABAAAA
	80s	AAAAAAAAAA	90s	Ae
052008	60s	eBBBBBAAE1	70s	11'1--11'11
052009	60s	----AAAAAA	70s	AAAAAAAAAA
	80s	ABBAAEEAAA	90s	Ae
052010	60s	----eAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
052011	60s	-----eAAAA	70s	AABAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
052014	60s	------fEAA	70s	BAAAEEEEE1
	80s	fEEeeeBAAA	90s	Ae
052015	70s	-AAAAAAAAE	80s	-----eeeee
	90s	Ae		
052018	70s	fEAAAAAAAA	80s	AAAAeeAAAA
	90s	Ae		
052017	70s	---EEEf'11	80s	-----eeeee
	90s	ee		
052020	60s	------fccf	70s	fffEAAAA1
	80s	------1111	90s	1
053001	50s	---eAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	E1
053002	50s	---eAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAeeeAAAA
	90s	Ae		
053003	30s	----------f	40s	fccbbbbc-b
	50s	bbebAAAAAA	60s	AAAAAAAAAE
	70s	'1111'1111	80s	'1-----11''
	90s	'		
053004	50s	--------FA	60s	AAAAAAAAEE
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
053005	60s	-EAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
053006	60s	-eAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
053007	60s	-eAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A!
053008	60s	----AAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
053009	60s	------AAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
053013	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
053017	70s	---EAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
053018	60s	----------e	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
053019	60s	----------e	70s	eeeeeeeeee
	80s	AAAAeeeeeA	90s	Ae
053020	60s	---------ee	70s	eeeeeeeeee
	80s	AAAeeeeee	90s	ee
053022	70s	------eAAA	80s	'AAAAE11111
	90s	1		
053023	70s	------eAAE	80s	AAAAAAAAAA
	90s	Ae		
053024	70s	---------AA	80s	AAAAAAAAAA
	90s	Ae		
053028	80s	AAAAAAAAAA	90s	Ae
053026	70s	---------AA	80s	AAAAAAAAAA
	90s	Ae		
053028	80s	--eeeAAAA	90s	Ae
053029	80s	----eeeeee	90s	Ae
054001	20s	-FCCCCCCCC	30s	CCCCCCCCCC
	40s	CCCCCCCCCC	50s	CCCCCCCCCC
	60s	CCCCCCCCCC	70s	CCAAAABAAA
	80s	AAAAAAAAAA	90s	Ae
054002	30s	------fbAA	40s	AAAAAAAABC
	50s	CCCCBAAAAA	60s	AAAAAAAAAA
	70s	BCBABABAAA	80s	AAAAAAAAAA
	90s	Ae		
054004	50s	--fCBAAAAA	60s	AAAAAAAAAA
	70s	BFEFBAAAAE	80s	AAAABAAAAA
	90s	Ae		
054005	50s	---fCBAAAA	60s	AAAAAAAAAA
	70s	ABBAAABAAA	80s	AAAAAAAAAA
	90s	Ae		
054006	50s	---fBAAAAA	60s	AAAAAAAAAA
	70s	BCBAAABBAB	80s	AAAAAAAAAA
	90s	Ae		
054007	50s	-------eAA	60s	AAAAAAAAAA
	70s	BCEEBBBAAA	80s	AAAAE11AAA
	90s	Ae		
054008	50s	------eAAA	60s	AAAAAAAAB8
	70s	CCAAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
054010	50s	---------e	60s	AAAAAAAAAA
	70s	BCbAAAAADD	80s	AADE1111111
	90s	1		
054011	60s	-eAAAAAAAB	70s	CCBABBABAB
	80s	AAAAE11111	90s	1
054012	60s	eAAAAAAAAB	70s	ABAAABBAAA
	80s	AAAAAAAAAA	90s	Ae
054013	60s	---------e	60s	AAAAAAAABA
	70s	AABABBBAAE	80s	1111--1'11
	90s	1		
054014	60s	--fBAAAAAB	70s	BAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
054015	60s	---------E	70s	EEEEEEAAAA
	80s	AeAA111111	90s	Ee
054016	60s	-eAAAAAAAA	70s	BAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
054017	60s	--eAAAAAAA	70s	BBAAAAAAAA
	80s	AAAA11---1	90s	Ee
054018	60s	--eAAAAAAA	70s	AAAAAAAAEA
	80s	AAAAE1TAAA	90s	Ae
054019	60s	--eAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
054020	60s	---eAAAAAB	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	Ae
054022	50s	---eAEAAE1	60s	1111111111EB
	70s	AEAAADAAAA	80s	AAAAAAAAAA
	90s	A		
054023	60s	---------eA	70s	BBAE11BAAA
	80s	AAAA1!1111	90s	Ee
054024	60s	1111111111E	70s	AAAAAAAAAA
	80s	AAAAAAeeee	90s	Ae
054025	60s	---------E	70s	ABAAAAAAAA
	80s	AADAAAAAAA	90s	Ae
054026	60s	---------F	70s	fEAAEAAAAA
	80s	AAFA1!1111	90s	!
054027	60s	---------e	70s	eAAAAAAAAA
	80s	AAAAE!1111	90s	Ee
054028	60s	---------1	70s	fBBAAAAAAA
	80s	AAAAAAeeee	90s	Ae
054029	70s	FBBAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
054032	70s	FBBAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
054034	70s	-EAAAAAAAA	80s	AAAA111EAA
	90s	Ae		
054038	70s	-fEAAAAAAA	80s	AAAAE1!111
	90s	Ee		
054038	70s	--1EABAAAA	80s	AAAAEAAAAA
	90s	Ae		
054040	70s	---FABAAAA	80s	AAAAAAeeeA
	90s	Ae		
054041	70s	--FCCCAAAA	80s	AAAAAAAAAA
	90s	Ae		
054042	70s	fEAEAAEE11		
054043	50s	-----fcccc	60s	ccccfccccc
	70s	F1-----111	80s	------1111
	90s	1		
054044	70s	-1EAAAAAAA	80s	AAAAAAAAAA
	90s	Ae		
054045	70s	---1AAAAAF		
054048	70s	-----1eeee	80s	eAAAE1
054047	70s	-----fbee-	80s	-1'111
054048	70s	------eAAA	80s	AAAAE1111'
	90s	Ee		
054049	70s	----------e	80s	eeeeeAAEA
	90s	Ae		
054050	80s	--------eee	90s	Ae
054052	70s	fbDAAAAAAA	80s	AAAA11fE11
	90s	Ee		
054055	70s	--ebeee---	80s	------1'11
	90s	1		
054056	70s	--EEEEE		
054057	70s	-fcccbbeee	80s	eeeeeeAAAA
	90s	Ae		
054058	70s	--eeebbee-	80s	
	90s	1		
054059	70s	--eeebeEE1	80s	------1111
	90s	1		
054060	70s	--ebeeeeee	80s	-fcH-1EAA
	90s	Ae		
054061	70s	--ebeebe--	80s	----------
	90s	1		
054062	70s	--EAEEBEAE	80s	AAAA111111
	90s	'		
054063	70s	--eeeebeee	80s	eeee
054065	70s	---EAABEAE	80s	-------1'11
	90s	'		
054066	70s	---EBBBAAA	80s	AAAA11!111
	90s	1		
054067	70s	----bbbee		
054068	70s	----eee		
054069	70s	----eeeee		
054070	70s	----eebeee	80s	eeee
054060	70s	-------fed	80s	eeee--1111
	90s	1		
054061	70s	-------EBA	80s	AAAAAAeeee
	90s	ee		
054063	70s	---------ee	80s	eeee--1111
	90s	1		
054064	70s	---------ee	80s	eeee--1111
	90s	1		
054065	70s	----------e	80s	eeee--1111
	90s	1		
054068	70s	----------e	80s	eeeee--eee
	90s	ee		
054067	70s	---BAEE---	80s	eeee--1--1
	90s	Ee		
054068	70s	---------ee	80s	eeeeeeAAAA
	90s	Ae		
054069	80s	---------ee	90s	Ae
054090	70s	---eeeeee	80s	eeeeeeAADF
	90s	1		
054091	70s	------AAAA	80s	AAAdadAADf
	90s	1		
054092	70s	---eAAAAAA	80s	AAAeeeAADA
	90s	E		
054094	80s	--eeeeeeAA	90s	Ae
054095	80s	----eeeeAA	90s	Ae
054096	80s	---------11	90s	1
055002	30s	-----eEEAA	40s	AAAAAAAAAA
	50s	AAAAAABAAA	60s	AAAEAAAAAA
	70s	CCCBAAAAAA	80s	AAACCCAAAA
	90s	A		
055003	30s	----------e	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAABAAAAA	80s	AE1------1
	90s	1		
055004	30s	-------eAA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAEAAAAAA
	70s	AAAAAAAAAA	80s	EEF1111111
	90s	1		
055005	30s	-------eBA	40s	AAAAAAAAAA
	60s	AAAAAAAAAA	60s	AAAEAAAAAA
	70s	--------111	80s	------1111
	90s	1		
055006	00s	--------CC	10s	CCCCCCCCCC
	20s	CCCCCCCCCC	30s	CCCCCBAAAA
	40s	AAAAAAAAAA	50s	AAAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAABCC
	80s	cCCFCf		
055007	30s	-------eAA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAEAAAAAA
	70s	CCCCCCCCCC	80s	CAACCCeeeA
	90s	A		
055008	50s	-eAAAAEEeA	60s	AAAEAAAEEA
	70s	AAAAADAAAA	80s	AAAAAAAAAA
	90s	A		
055009	40s	---------eA	50s	AAAAAAAAAA
	60s	AAAEAAAAAA	70s	AAE!1111!1
	80s	------1111	90s	1
055010	50s	-----eAAAA	60s	AAAEAAAAAA
	70s	AAAAAAAEAA	80s	EFF1'1111'
	90s	1		
055011	50s	----------e	60s	AAAAAAAAAA
	70s	AAAAAABAAA	80s	DBF1111111
	90s	'		
055012	60s	------eAAA	70s	AAAAAAAEEA
	80s	AAAAAAAAAA	90s	A
055013	60s	------eAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
055014	60s	------eAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
055015	60s	------eAAA	70s	AAAAAAAAEE
	80s	EAD1111111	90s	1
055016	60s	---------eA	70s	EAEAAAAAAA
	80s	AAAAAAAAAA	90s	A
055017	60s	---------eA	70s	BAAEEAAAAA
	80s	AE----1111	90s	1
055018	60s	---------eA	70s	AAAAAAAAAE
	80s	AAAAAAAAAA	90s	A
055021	60s	------111E	70s	AAAAAAAAAA
	80s	AAEIFADAAA	90s	A
055022	60s	-------1-e	70s	AAAABAAAAF
	80s	1FFF'1111'	90s	1
055023	30s	------fBAA	40s	AABAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAAA
	70s	CCCCCCCCCC	80s	CAAAAAAAAA
	90s	D		
055025	60s	------1'11	70s	FAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
055026	30s	-------eBA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAEAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	A		
055027	70s	-eAAAAAAEf	80s	111---1111
	90s	1		
055028	70s	-eAAAAAAAE	80s	ADAAAACAAA
	90s	A		
055029	40s	---------eA	50s	AAAAAAAAAA
	80s	AAAEAAAAAA	70s	AAAAAAAAAA
	80s	EAAAADAAAD	90s	A
055030	20s	------fccc	30s	cccccccfc
	40s	ccccccccc	50s	c----------
	60s	----------	70s	---1111
055031	70s	-11EAAAAAA	80s	AAAAAAAAAD
	90s	D		
055032	00s	--------CC	10s	CCCCCCCCCC
	20s	CCCCCCCCCC	30s	CCCCCBAAAA
	40s	AAAAAAAAAA	50s	AAAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAAABCC
	80s	cAAAAAedee	90s	e
055033	80s	----------c	70s	---eeeeee
	80s	eeeeedAAAE	90s	1
055034	70s	---eeeeee	80s	eeeeeAAAF
	90s	f		
055035	70s	---eeeeee	80s	eeeeeAAE'
	90s	'		
056001	50s	-------EAA	60s	AAAAAAAAAA
	70s	AAAAAABAAA	80s	AAAAAAAAAA
	90s	A		
056002	50s	-------eAA	60s	AAAAAAAAAE
	70s	AAAAAE11AA	80s	AAAAAAAAAA
	90s	A		
056003	60s	---eAAAAAA	70s	AAAAABAAAA
	80s	AA1---1111	90s	1
056004	60s	-----eAAAA	70s	AAAAAAAAAA
	80s	E11---1111	90s	1
056005	60s	-----fEAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
056006	60s	---eAAAAAA	70s	AAAAAAAAAA
	80s	AA1111111'	90s	1
056007	60s	------1EAE	70s	EAAAAAAAAA
	80s	AAAAAAAAAA	90s	A
056008	70s	ebeAAEE111	80s	11----1111
	90s	1		
056010	60s	----------e	70s	eeeeeeeeee
	80s	ee----1111	90s	1

Stn number	Gauged daily flows, monthly peaks and rainfall											
056011	70s	eeeAAAAAAA	80s	AAt---tttt	064001	60s	--EAAAAEAA	70s	AEttEttttt	069003	30s	--------eEt	40s	tttttttttE
	90s	t				80s	tDAAAAAAAA	90s	A		50s	AAAAAAAAAA	60s	AAAAAAAEAA
056012	70s	-AAAAAAAB8	80s	AAt---tttt	064002	60s	-----tAEtA	70s	EEDDDDDAAA		70s	AAAEEtAEAE	80s	AAAAAAAAAA
	90s	t				80s	AAAAAAAAA	90s	A		90s	Ae		
056013	70s	--eAAAAAAA	80s	AAAAAAAAAA	064006	60s	fccccccccc	70s	cBABAAAAAA	069004	40s	-----fBBBB	50s	BBBBBBBBAA
	90s	A				80s	AAAAAAAAAA	90s	A		60s	AAAAAAAAFt	70s	BBCCCCCCCC
056014	70s	----------e	80s	eedf	064007	80s	eddadeE	90s	t		80s	CCtt		
056015	70s	--tttEAAAE	80s	AAtt--tttt	064008	80s	---daddded-	90s	t	069005	50s	----eAEAAA	60s	AAAAAAAFAA
	90s	t									70s	AAAEAAEEEA	80s	EAAEtt
056016	70s	----------e	80s	eeebaaaa	065001	60s	-eAABAABAE	70s	tLEEEAAAAD	069006	50s	-----eAAAA	60s	AAAAAAAAAA
						80s	AAAAAAAAAA	90s	A		70s	DAAFAEAAAA	80s	AAAAAAAAAA
057001	30s	-------eeEB	40s	e------ -	065002	60s	- -- eee	70s	eEFEFtEEtt		90s	Ae		
	50s	--eeAABAAA	60s	ABBBBBAAFA		80s	----------	90s	t	069007	70s	-tttttttttt	80s	tAAAAAAAFA
	70s	AAAAttttt	80s	tttt	065004	70s	eEEEAAAAAA	80s	AAAAAAAAAA		90s	Ae		
057002	30s	-eeeeeeAA	40s	AAAAAEAAAA		90s	A			069008	80s	tttteeEttF	90s	A
	50s	AADDAABAAA	60s	AAAAAAAAAA	065005	70s	--tAAAAAAA	80s	AAAAAAAAAA	069011	80s	tttt--tttt	90s	t
	70s	ABAAttttttt	80s	ttt		90s	A			069012	80s	-----eAAAA	90s	Ae
057003	60s	-----eAAAA	70s	AAAttttttt	065006	70s	------eAAA	80s	AAAAAAAAAE	069013	80s	---e--eeAAAE	90s	Ee
	80s	ttttttttttt	90s	t		90s	E			069015	70s	-------AEE	80s	AAAAAAAAAA
057004	50s	-------eAA	60s	AEEAAAAAAA	065007	70s	- -tEAAAA	80s	AAAAAAAAAA		90s	t		
	70s	AAAAAAAAAA	80s	AAAAAAAAAA		90s	A			069017	70s	---------AAt	80s	tAAAAAAAAA
	90s	A									90s	t		
057005	70s	eAAAAAAAAA	80s	AAAAAAAAAA	066001	50s	----------e	60s	AAAAAAAAAA	069018	60s	----------t	70s	tttttttt tt
	90s	A				70s	AAAAAAACCF	80s	Ctttttttta		80s	tt----tttt	90s	t
057006	70s	eAAAAAAAAA	80s	F'tFAAAAAAA		90s	A			069019	60s	---------e	70s	eeeeeeccbb
	90s	A			066002	60s	-eABAAAAAC	70s	BAAAEttttt		80s	bee---ttt'	90s	t
057007	70s	--tEAAAAAA	80s	AAAAAAaaaD		80s	------t't	90s	' .	069020	70s	------AAAA	80s	AAAAAAAAAA
	90s	A			066003	60s	---eAEtEAt	70s	t'ttEEEEEE		80s	Ae		
057008	70s	--tAAAAAAA	80s	AAAAAAAAAA		80s	AADt'taaee			069023	70s	--------EA	80s	tAAAAAaaaa
	90s	A			066004	70s	eAAAAAA'tt	80s	t't---tttt		90s	ee		
057009	70s	-----AAAAA	80s	AAAAAAAAAA		90s	t			069024	80s	tAAAAAeeee	90s	e
	90s	A			066005	70s	-EAEAAAtt'	80s	tt----tttt	069027	70s	--------Dt	80s	tAAAAAAAAA
057010	70s	----eAAAAA	80s	EAAAAAAAAA		90s	t				90s	E		
	90s	A			066006	70s	---EAAAAAA	80s	AAAAAAAAAA	069030	70s	------etDA	80s	AAAAAAaaee
057011	70s	------eeee	80s	e--------		90s	A				90s	ee		
	90s	t			066008	70s	-------aee	80s	bbeeedAAAE	069031	80s	-eeeeeAAAF	90s	t
057012	70s	------eeee	80s	e---------t		90s	t			069032	70s	----------A	80s	AAAAAAee-e
	90s	t			066011	60s	----eEEEEA	70s	AAEAAAAAAA		90s	e		
057015	70s	---------eA	80s	ABACCCeeeA		80s	AAAAAAAAAA	90s	A	069034	80s	-----e-tttt	90s	t
	90s	A								069035	70s	-------AEA	80s	tAAADAef--
057018	70s	----------e	80s	AAAAAAeeee	067001	50s	--------eAA	60s	AAAAAAAAAA		90s	ee		
	90s	e				70s	ABAAAAAAAA	80s	AAACCCeeee	069037	80s	------tCCFC	90s	t
						90s	e			069040	80s	---eeeeee	90s	ee
058001	60s	---eAAAAAA	70s	AAAAAAAAAA	067002	30s	. eAA	40s	AAAAAAAAAA					
	80s	AAAAAAEAAA	90s	A		50s	AAAAAAAAAA	60s	AAAAAAAAAA	070002	80s	BAABAAAAAE	90s	E
058002	70s	-----AAEEB	80s	EAADAAAAAA		70s	A1111t--ttt			070003	70s	-------e--	80s	---eeeeeb
	90s	A			067003	70s	eAAAAAAA	30s	AAAAAAAAAA		90s	e		
058003	60s	--eAAEtttt	70s	tttttttttt		40s	AAAAAAAAAA	50s	AAAAAAAAAA	070004	70s	------AAAA	80s	AAAAAAAAAA
	80s	-------tttt	90s	t		60s	AAABBAAAAA	70s	AABAABCAAA		90s	Ee		
058005	70s	eAAAAAAAAA	80s	AAADFADBAA		80s	AAAtFAAAAA	90s	A	070005	70s	---------e-	80s	-eeeeeeee
	90s	D			067005	50s	---tttEAAA	60s	AAAAAAAAAA		90s	ee		
058006	70s	-EAAAAAAAA	80s	EAAAAAAAAA		70s	AAAAAAAttt	80s	ttt---tttt					
	90s	A				90s	t			071001	60s	tCCCbAAAAA	70s	BCBRBAAAAA
058007	70s	eBAAAAAAAA	80s	EAAAAAAAAA	067006	60s	eAAAAAAAAA	70s	BAAAAAAAAA		80s	AAAAAAAAAA	90s	Ee
	90s	A				80s	AAAAAAAAAA	90s	A	071003	50s	-------eAA	60s	AAAAAAAAAA
058008	70s	-EAAAAAAAA	80s	EDADADACAA	067008	60s	EBAAA	70s	AAAAAAAAAA		70s	AAAAEt-ttt	80s	------tttt
	90s	A				80s	AAAAAAAAAA	90s	A		90s	t		
058009	70s	-EAAAAAAAA	80s	AAADAADAAA	067009	60s	------EE1FB	70s	BBBBEBEBAB	071004	60s	---eBAAAAA	70s	AEttAEAAAB
	90s	A				80s	B1DDDDdedD	90s	B		80s	AAAAAAAAAA	90s	Ee
058010	70s	-----aaaaa	80s	eFtt--tttt	067010	60s	-------EAAA	70s	AAAAAAtttt	071005	60s	eAAAAAAAAA	70s	AABbEt ttt
	90s	t				80s	tt----tttt	90s	t		80s	------tttt	90s	t
058011	70s	-------eAAA	80s	AAAAAAAAAA	067011	60s	--------ccc	70s	ccftcccch	071006	60s	--------FC	70s	CFCCAAFAAA
	90s	A				80s	H				80s	DAAAAAAAAE	90s	Ee
058012	80s	------ttt'	90s	t	067012	60s	--- ---EE:	70s	tt'ttt-ttt	071007	80s	tt't		
					067013	60s	--------EDE	70s	AAAAAaattt	071008	70s	--------AEt	80s	tAAAAAAAAA
059001	50s	--------eEA	60s	AAABAAAAAA		80s	------ttt'	90s	t		90s	Ee		
	70s	AEAEEAAAAA	80s	DAAAAAAAAA	067015	30s	---------eAA	40s	AAAAAAAAAA	071009	80s	eeeeeeAAAE	90s	Ee
	90s	A				50s	AAAAAAAAAA	60s	AAAAAAAAAA	071010	70s	-fccccfAAt	80s	tAAAAAAtAB
059002	60s	--------FFB	70s	AABBBBAAAA		70s	AAAAAAAAAA	80s	AAAAAAAAAA		90s	Fe		
	80s	AAAAAAAAAA	90s	A		90s	A			071011	60s	------FFFC	70s	CCFFttEAE
					067016	60s	--------EAE	70s	ttttEttttt		80s	EAAAAAAAAB	90s	Fe
060002	80s	-eAAAAAAE'	70s	BAAAAAAAEE		80s	tt--------t	90s	t	071013	80s	eeeee-----	90s	e
	80s	EAADAADAA	90s	A	067017	60s	-- -tB	70s	AAAAAAAAAA	071014	70s	--------eee	80s	-eeeeeeee
060003	80s	-----EAAAA	70s	AEEAAAAAAA		80s	AAAAAAeeee	90s	e		90s	ee		
	80s	AAAAAADAAA	90s	A	067018	60s	----------tE	70s	AAAAAAAAAA					
060004	60s	--------ttE	70s	EFAAAAAAAA		80s	AAAAAAAAAA	90s	A	072001	50s	----------c	60s	cCCCCCCBCC
	80s	AAt---tttt	90s	t	067025	70s	------eeee	80s	eAAAEttttt		70s	CAAAAABttt	80s	------tttt
060005	60s	---------fe	70s	BADAAAAAAA		90s	t				90s	t		
	80s	AAAAAAAAAA	90s	A	067026	70s	cccccc	80s	cCCCCCc	072002	60s	---eAAAAAA	70s	AAABCCAAAF
060006	60s	--------FB	70s	B88ABAAAAA	067028	70s	---------ee	80s	ee---------		80s	AAAAAAAAAB	90s	Fe
	80s	AAAAAAAAAA	90s	t		90s	t			072004	50s	----------C	60s	cCCCCCCCBB
060007	60s	---------fA	70s	AAAAAAAAAA	067029	70s	- - - - - eee	80s	eeddfdd		70s	CCCCCCCCtt	80s	-eeAAAAAAA
	80s	AAAAAAAADA	90s	t							90s	Ae		
060008	80s	---teeeeee			068001	30s	eAB	40s	AABCBBABBB	072005	60s	----------F	70s	CCCCCCFAAt
060009	70s	FCCCCFFttt	80s	tttttttttt		50s	BAAAAAAAAA	60s	AAAAAAAEAE		80s	tAAAAADAAA	90s	A
	90s	t				70s	AAAAAEAAAt	80s	EAAAAAAAAA	072006	60s	---------tt	70s	ttttttttt
060010	50s	---------eB	60s	AAAAAAAAAA		90s	Ae				80s	tttt--tttt	90s	t
	70s	AAAAAeeee-	80s	eeeeeeeeAA	068002	40s	----------e	50s	AAAAAAAAAA	072007	80s	-----eAAAA	90s	F
	90s	A				60s	AAAAAAAFAA	70s	AAAAAAEttt	072008	60s	--------ME	70s	EABCCCAAAA
060012	70s	tAABBBAEEA	80s	EEt---tttt		80s	tt----tttt	90s	t		80s	AAAAAAEEAA	90s	Ee
	90s	t .			068003	40s	----------e	50s	AAAAAAAAAA	072009	70s	tttttttttt	80s	tAAAAAAAAA
060013	70s	-EBCCCFttt	80s	tt----tttt		60s	AAAAAAAFAA	70s	AAAAAFtttt		90s	Le		
	90s	t				80s	tDAAAAAAAA	90s	Ae	072011	60s	---------fc	70s	t-------EEA
					068004	50s	--------eAA	60s	AAAAADADAA		80s	tDAEEADAEE	90s	Fe
061001	80s	-----eAEAE	70s	EAAEtttttt		70s	AAAAAEAAtt	80s	tAAAAAAAEE	072014	90s	Ee		
	80s	tttttttttt	90s	t		90s	Ae			072015	80s	-----eDECE	90s	Ae
061002	60s	eABAAAABBA	70s	AAEADAAAAA	068005	50s	--eAAAAAA	60s	AAAABAAEAA	072018	80s	-eeeeeEAA	90s	Ae
	80s	AAAAAEAEDA	90s	A		70s	AAAAAEEEAA	80s	AAAAAAAEAA					
061003	60s	----------e	70s	AEAAAAAAAA		90s	Ae			073001	70s	tccccctt--	80s	------tttt
	80s	AAAAAAAtEA	90s	t	068006	50s	---eAAAAAA	60s	AAAAAAAEEA		90s	t		
061004	60s	-----eAEAE	70s	FAeeeeeee		70s	AAAAAEttt	80s	tEEAAtttt'	073002	60s	---EAAAADA	70s	RBBCAAAAAA
	80s	eeeactAETA	90s	t		90s	t				80s	AAAAAAAAAA	90s	E
					068007	60s	--eBAAAAAA	70s	AAAAAEAAEA	073003	80s	-eeeeEAtt	90s	t
062001	50s	----------E	60s	AAAAAAAAAA		80s	AAtEAAAAAA	90s	E	073005	60s	--------EB	70s	BBABAACAAA
	70s	EAAAAAAAAA	80s	AAAAAAAAAA	068010	70s	---'tttttt	80s	tt----tttt		80s	AAAAAAAAAA	90s	A
	90s	A				90s	t			073006	80s	-------eee	90s	ee
062002	70s	-eeeAAAEAE	80s	EFt---'ttt	068015	80s	-eeeeeAAAA	90s	E	073008	60s	----------F	70s	AAEtAAAttt
	90s	t			068018	70s	- - - - t				80s	tAAAAAAAAA	90s	E
					068020	80s	-AAAAAAADD	90s	Ee	073009	70s	tttttttttt	80s	tAAAAAAAAA
063001	60s	---eAAAAAA	70s	AAAAAAAAAA							90s	Fe		
	80s	EAAAAAAAAD	90s	A	069001	30s	ehabB8	40s	BBBBBBBBB	073010	30s	----------C	40s	CCCCCCCCCC
063002	60s	-----eAFAA	70s	AAAAAAAAFF		50s	AAAAAAAABA	60s	BAAAAAABEA		50s	CCCCBCCCCC	60s	CCCCeCCCCC
	80s	AAAADt				70s	AAARABAAAt	80s	tAAAeeeee		70s	CBBBCCCAAA	80s	AAAAAAAAAA
063003	70s	eeeeAAEAAE	80s	tt----tttt		90s	e				90s	A		
	90s	t			069002	40s	----------e	50s	AAAAAAAAAA	073011	70s	FCCCCC'Att	80s	tAAAALLAtt
063004	60s	------tttt	90s	t		60s	AAAAAAAEAA	70s	AAEEAtAAAA		90s	Ee		
063005	80s	----eddddE	90s	t		80s	AAAAAAAAAA	90s	Ae	073013	80s	ttttttee-t	90s	Ee
063006	80s	----eddddE	90s	t						073014	80s	tttt--tttt	90s	E

Stn. number	Gauged daily flows, monthly peaks and rainfall															
074001	60s	--------EC	70s	CCBCCCBAAA	081004	70s	-------dAA	80s	AAAAAAAAAA	093001	70s	----------A	80s	AAAAAAAAAA		
	80s	AAAAAAAAAA	90s	E		90s	Ae				90s	Ae				
074002	60s	--------eBB	70s	AAAAABBADA	081005	80s	-----aaaeA	90s	Ae							
	80s	AAAAAAAAAA	90s	E	081006	80s	------aaaA	90s	Ae	094001	60s	-tttttt*11	70s	EAAAAAAAae		
074003	70s	---eEADAAA	80s	AAAAAAAAAA	081007	80s	----------ae	80s	Ae		80s	AAAAAAAAAA	90s	Ae		
	90s	Ee														
074005	70s	---1BAAAAA	80s	AAAAAAAAAA	082001	60s	-11EAAAAAA	70s	AAAAAAAAAA	095001	70s	--------aAA	80s	AAAAAAAAAA		
	90s	Ae				80s	AAAAAAAAAD	90s	D		90s	Ae				
074006	60s	----fCCFCC	70s	CCF1BBBAAA	082002	70s	---*EAAAAA	80s	AAAAAAaaae	095002	80s	-----aaaae	90s	ae		
	80s	AABAAAAAAA	90s	Ae		90s	A									
074007	70s	-----fAAAA	80s	AAAAAAAAAA	082003	70s	---AAAEEAA	80s	AAAAAAAAAD	096001	70s	------AAAA	80s	AAAAAAAAAA		
	90s	E				90s	A				90s	Be				
074008	70s	--------aa-	80s	-babeaaa--						096002	70s	--------aAA	80s	AAAAAAAAAA		
	90s	e			083001	60s	----1111--	70s	-fffffffff		90s	Ae				
						80s	ff			096003	80s	-----aaaae	90s	Ae		
075001	30s	-111*EAE11	40s	1111*EAAAA	083002	60s	---eAAAAae	70s	AAAAAAAe--	096004	80s	--------aae	90s	ae		
	50s	AAAAAAAAAA	60s	AAABAAAAEE		80s	--------111	90s	f							
	70s	E11AAAEAAA	80s	AAAAAAAAAA	083003	60s	-11111111	70s	EAAAAAAAAA	097001	50s	--------f--	60s	----*111--		
	90s	A				80s	AAAAAAAAAA	90s	A		70s	-111111---	80s	11-111		
075002	60s	fcBCBBBBBA	70s	AAAAAAAAAA	083004	70s	-1EAAAAAAA	80s	AAAAAAAAAD	097002	80s	-1111*1111	70s	11AAAAAAAA		
	80s	AAAAAAEAAA	90s	Ae		90s	A				80s	AAAAAAAAAA	90s	Ae		
075003	60s	---------eA	70s	BAABAABAAA	083005	70s	--EAAAAAAA	80s	AAAAADAAAA							
	80s	AAAAAAAAAA	90s	A		90s	D			101001	60s	-fcfFFcfFF	70s	FcCCfcC111,		
075004	60s	--------fBA	70s	BBABAACAAA	083006	70s	------edeb	80s	aaaaaaAAAA		80s	111111111	90s	1		
	80s	AAAAAAAAAA	90s	A		90s	A			101002	60s	-----aaaaf	70s	aaabbaaEEE		
075005	70s	--AAABCAAA	80s	AAAAAAAAAB	083007	70s	--------aaa	80s	aaaaaaAAAA		80s	EBEAAAAAAA	90s	Ae		
	90s	Ae				90s	D			101003	80s	f--eddDAAA	90s	Ae		
075006	60s	---------eA	70s	AAAAAAAAAA	083008	80s	aaaaaaaaB	90s	A	101004	80s	--aaaAAAA	90s	Ae		
	80s	a-----1111	90s	1	083009	70s	---------ae	80s	aaaaaAABA	101005	80s	--aaaAAAA	90s	Ae		
075007	60s	----------e	70s	AAAAAAAAA1		90s	A			101006	80s	--aaaAAAA	90s	De		
	80s	------111!	90s	1	083010	70s	--------aaa	80s	aaaaaAAAA	101007	80s	--aaaAADA	90s	Ae		
075009	70s	-eAAABRAAA	80s	ABAAAAAAAA		90s	A									
	90s	A								201002	70s	-aaaaaaaaa	80s	aaaAAAaaaa		
075016	70s	-------DDD	80s	AAABAAaaaa	084001	40s	---------eE	50s	EEEBBBBEEB		90s	E				
	90s	ae				60s	AAAAAAAAAA	70s	AAAAAAAAAA	201005	70s	-1EAAAAAAA	80s	AAAAAAAAAA		
075017	80s	--aAAAAAAA	90s	Ae		80s	AAAAAAAAAB	90s	A		90s	E				
					084002	50s	--eA1EAEEE	60s	AAEEALEEFC	201006	70s	--aaaaaAAA	80s	AAAAAAaaaa		
076001	50s	--1EABAE11	60s	EAABAAAAAA		70s	AAEEEEE111	80s	1111111111		90s	E				
	70s	F11111F1FA	80s	AEAAAAaaaa		90s	f			201007	70s	11111EALAA	80s	AAAAAAAAAA		
	90s	ae			084003	50s	------eBDA	60s	AAAAAAAAAA		90s	E				
076002	60s	----*1EBBA	70s	AABABBCAAE		70s	AAAAAAAAAA	80s	AAAAAAAAAA	201008	70s	------aaaa	80s	aaaAAAAAAA		
	80s	ABAAAAAAAA	90s	Ae		90s	A				90s	E				
076003	60s	-eAAAAAAFA	70s	AAAAAAAAAA	084004	50s	-------eAA	60s	AAAAAAAAAA	201009	80s	aaaaaaaaa	90s	L		
	80s	ABBAAAaaaa	90s	e		70s	AAAAAAAAAA	80s	AAAAAAAAAD	201010	80s	--aaaaaaaa	90s	E		
076004	60s	--eAAAADAA	70s	ALALAAA1AA		90s	D									
	80s	fAAAAAAAAA	90s	A	084005	50s	---------eA	60s	AAAAAAAAAA	202001	80s	-aaaaaeAAA	90s	E		
076005	60s	-----eAABBB	70s	AAAABBBAAA		70s	AAAAAAAAAA	80s	AAAAAAAAAA	202002	70s	------aaaa	80s	aaaaaaaaa		
	80s	AAAAAAAAAA	90s	A		90s	Be				90s	E				
076007	60s	--------eAA	70s	AAAAAAAA11	084006	60s	-11EAAAAAA	70s	AAAAAAAEAA							
	80s	1AAAAAAAAB	90s	A		80s	AAAE111111	90s	1	203010	60s	-1111111111	70s	EAAAAAAAAA		
076008	60s	--------eAA	70s	EAAAAFF1A1	084007	60s	-----eFAAA	70s	AAAAAAABBA		80s	AAAAAAAAAA	90s	E		
	80s	fAAAAAAAAA	90s	A		80s	AAAAAAbaaD	90s	ae	203011	70s	aaaaaaaaa	80s	a--111----		
076009	60s	---------eE	70s	BAAAAAE111	084008	60s	------eAAA	70s	AAAAAAAAAA		90s	1				
	80s	1BAAAAAAAA	90s	A		80s	AAAAAAAAAA	90s	Ae	203012	70s	aaaaaaaaa	80s	aaaAAAAAAA		
076010	60s	----------1	70s	EAAAAAE111	084009	60s	------eAAA	70s	AAAAAAAAAA		90s	L				
	80s	fAAAAAAAA1	90s	A		80s	AAAF1E1EAA	90s	Ae	203013	70s	aaaaaaaaa	80s	aaaaaaaaa		
076011	60s	--------aaa	70s	aaaaaaaaa	084011	60s	---eAAAAAA	70s	AAAAAAAAAA		90s	1				
	80s	aaaaaAAAA	90s	L		80s	AAAAAAAAAB	90s	Ae	203017	70s	aAAAAAAAAA	80s	AAAAaAAAAA		
076014	70s	-EAAAAAA11	80s	1AAAAAAAAE	084012	80s	-11EAAAAAA	70s	AAAAAAAAAA		90s	E				
	90s	A				80s	AAAAAAAAAB	90s	Ae	203018	70s	aaaaaaAAA	80s	AAAAAAaaaa		
076015	70s	EAABAABAAA	80s	AAAAADAAAA	084013	60s	---eAAAAAA	70s	AAAAAAAAAA		90s	E				
	90s	A				80s	AAAAAAAAAA	90s	Ae	203019	70s	--aaaaaaa	80s	aaaaaaaaa		
					084014	60s	----eAAAAA	70s	AAAAAAAAAA		90s	E				
077001	60s	---eDAEEAE	70s	EEEBAAAAA1		80s	AAAAAAAAAE	90s	Ae	203020	70s	-aaaaaaaa	80s	aaaAAAAAAA		
	80s	fAAAAAAAAA	90s	A	084015	60s	e1111EAAAA	70s	AAAAAAAEAA		90s	E				
077002	60s	-1FCCBAAAA	70s	AAAAAAAAAA		80s	AAAAAAAAAA	90s	A	203021	70s	-aaaaaaaa	80s	aaaAAAaaaa		
	80s	AAAAAAAAAA	80s	Ae	084016	60s	-11111EEDA	70s	AAAAABBAAA		90s	E				
077003	70s	---DAAAAAA	80s	AAAAAAAAAA		80s	AAAAAAAAAA	90s	Ae	203023	70s	--aaaaaaa	80s	aaaaaaaaa		
	90s	Ae			084017	60s	-------EAA	70s	AAAAAAAAAA		90s	e				
077004	70s	----------d	80s	aAAAAAAAAA		80s	AAAAAAaaaa	90s	ae	203024	70s	-aaaaaaaa	80s	aaaaaaaaa		
	90s	Ae			084018	60s	--------.--A	70s	AAAAAAAAAA		90s	E				
077005	70s	--------a--	80s	---aaaAAAE		80s	AAAAAAAAAA	90s	A	203025	70s	-aaaaaaaa	80s	aaaAAAaaaa		
	90s	A			084019	60s	---AAAAAAA	70s	AAAAAAAAAA		90s	E				
						80s	AAAAAaaaa	90s	ae	203026	70s	-aaaaaaaa	80s	aaaaaaaaa		
078001	50s	---------eA	60s	AE111-----	084020	60s	---------eE	70s	ADAAADAEAE		90s	E				
	70s	111111----	80s	------1111		80s	AAAAAAAAAA	90s	A	203027	70s	-1EAAAAAAA	80s	AAAAAAaaaa		
	90s	1			084021	60s	----------E	70s	AAEFF11111		90s	E				
078002	60s	---eAE1111	70s	1111111---	084022	60s	-------eEEE	70s	EEEAAEAAEA	203028	70s	-1FAAAAAAA	80s	AAAAAAAAAA		
	80s	------1111	90s	1		80s	AAAAAABAAD	90s	A		90s	E				
078003	60s	-111111DAA	70s	AAAAAAAAAA	084023	70s	---FAAAAFA	80s	AAAAAAAAAA	203029	70s	---aaaaaaa	80s	aaaaaaaaa		
	80s	AAAAAAAAAA	90s	Ae		90s	A				90s	E				
078004	60s	-11EBEEAAA	70s	AAAAAAAAAA	084024	70s	--eAAAAAAE	80s	AAEAAAaaba	203033	70s	-----aaaaa	80s	aAaAAEaaaa		
	80s	AAAAAAAAAA	90s	Ae		90s	b				90s	E				
078005	70s	----------A	80s	AAAAAAAAAA	084025	70s	---11AAAAE	80s	AAAAAAAAAA	203038	80s	---aaaaaaa	90s	E		
	90s	Ae				90s	A			203040	80s	aaaaaaaaa	90s	E		
078006	80s	---aaaAAAA	90s	Ae	084026	70s	----aaaaae	80s	aaaaaaAAAA	203042	80s	-aaaaaaaa	90s	E		
						90s	A			203092	80s	---aaaaaaa				
079001	60s	-1111LBBEF	70s	FFCCCFCCcc	084027	60s	---------ae	70s	aaaEAEEDE1	203093	80s	----aaaaaa	90s	1		
	80s	cf				80s	------aaaac									
079002	50s	--------eAA	60s	AAAAAAAAAA	084028	70s	-----aaaaa	80s	aaaaaaaaa	204001	70s	--aaaaaaa	80s	aaaAAAaaaa		
	70s	AAAAAAAAAA	80s	AAAAAAAAAA		90s	e				90s	1				
	90s	Ae			084029	70s	-----aaaaa	80s	aaaaaaAAAE							
079003	50s	----------e	60s	AAAAAAAAAA		90s	D			205003	70s	-caaaaaaa	80s	aaaaa-----		
	70s	AAAAAAAAAA	80s	AAAAAAAAAA	084030	80s	-aaaaaaad	90s	A		90s	1				
	90s	Ae								205004	70s	--aaaaaaa	80s	aaaAAAaaaa		
079004	60s	-11FCBAAAA	70s	AAAAAAAAAA	085001	60s	---eAAAAAA	70s	AAAAAAAAAA		90s	1				
	80s	AAAAAAAAAA	90s	Ae		80s	AAAAAAAAAA	90s	A	205005	70s	--EAAAAAAA	80s	AAAAAAAAAA		
079005	60s	-11EAAAAAA	70s	AAAAAAAAAA	085002	60s	-11EAAAAAA	70s	AAAAAAAAAA		90s	1				
	80s	AAAAAAAAAA	90s	Ae		80s	AAAAAEAAAA	90s	A	205006	70s	--aaaaaaa	80s	a----------		
079006	60s	-111111EAA	70s	AAAAAAAAAA	085003	60s	-11111111	70s	EAAAAEAAEE		90s	1				
	80s	AAAAAAAAAA	90s	Ae		80s	AAAAAAAAAD	90s	A	205008	70s	----aaaaaa	80s	aaaAAAaaaa		
					085004	70s	-------aaaa	80s	aaaa-aAAAA		90s	1				
080001	60s	-11EAAAAAA	70s	AAAAAAAAAA		90s	A			205010	70s	----aaaaaa	80s	aaaaaaaaa		
	80s	AAAAAAAAAA	90s	Ae							90s	1				
080002	70s	-------dAA	80s	AAAAAAaaaa	086001	60s	---------eA	70s	AAAAAA8888	205020	80s	---aaaaaaa	90s	E		
	90s	Ae				80s	AAAAABaaad	90s	a							
080003	80s	daaaaABAA	90s	Ae	088002	80s	-111111EE	70s	AAAAA88AAA	206001	70s	-------aaaa	80s	a----------		
080004	80s	--aaa11AA	90s	Ae		80s	AAAAAAAAAE	90s	D		90s	1				
080005	80s	---aaa11AA	80s	Ae						206002	70s	--aaaaaaa	80s	aaaaaaaaa		
080006	80s	---aaa--Ae	90s	Ae	089008	80s	-aaaaaaab	90s	A		90s	1				
					089009	80s	-aaaaaaaa	90s	A							
081001	60s	-----e88e-	70s	--------111						238005	70s	-----aaa--	80s	-aaaaaaaa		
081002	60s	-11EAAAAAA	70s	AAAAAAAAAA	090003	80s	--aaaAAAA	90s	Ae		90s	E				
	80s	AAAAAAAAAA	90s	Ae						238007	80s	-aaaaaaaa	90s	1		
081003	60s	-111111AAA	70s	AAAAAAAAAA	091002	80s	eAAAAAaaaa	90s	ae							
	80s	AAAAAAAAAA	90s	Ae												

Summary of Archived Data – 2

Naturalised daily and monthly flows

KEY:

Complete daily and complete monthly	A
Partial daily and complete monthly	B
Partial daily and partial monthly	C
Partial daily and no monthly	D
No daily and complete monthly	E
No daily and partial monthly	F
No naturalised flow data	–

Stn number	Naturalised daily and monthly flows			
006007	70s	---EEEEEEF		
007003	50s	FEEEE	70s	EEEEEEEEEE
	80s	F		
008001	30s	---------FE	40s	FFEEEEEEEE
	50s	EEEEEEEEEE	60s	FEEEEF
013007	70s	------EEEE	80s	EEEEEE
015003	70s	---EEEEEEE	80s	EEEEEE
015006	60s	--------FEE	70s	F--EEEEEEE
	80s	EEEEEE		
015007	70s	---EEEEEEE	80s	EEEEEE
015008	70s	---EEEEEEE	80s	EEEEEE
015010	70s	---EEEEEEE	80s	EEEEEE
015011	70s	---EEEEEEE	80s	EEEEEE
015012	70s	---EEEEEEE	80s	EEEEEE
015013	70s	---EEEEEEE	80s	EEEEEE
015016	70s	----FEEEEF	80s	EEEEEF
015017	70s	F		
015024	80s	EEEE		
016001	60s	FEEEEEE	70s	EEEEEEEEE
	80s	EEEEEE		
016004	70s	-EEEEE	80s	E
017001	80s	F	70s	EF E
017002	80s	----F	70s	EF----E
017003	70s	E		
017004	70s	E		
017005	70s	------E		
018001	70s	------E		
018002	60s	-----FEEEE	70s	F-----E
018003	60s	----FEEEEE	70s	EF----E
018005	70s	------E		
018008	70s	------E		
019001	50s	--------EEE	60s	EEEEEEEEEE
	70s	FEEEEF		
019002	60s	--EEEEEEEE	70s	EEE-EEE
019003	60s	FEEEFEEE	70s	EEEEEEE
019004	60s	EEEEEEEEF	70s	EEE EEE
019005	60s	FEEEEEE	70s	EFEEEE
019006	60s	---FFEEEF	70s	EEEFEEF
019007	60s	--FEEEEEE	70s	EEEEEEE
019008	60s	---FEEEE	70s	EEEEEE
019010	60s	---------E	70s	EEEEEEE
019011	70s	-- E		
020001	60s	EEEEEEEEE	70s	EEEEEEE
020002	80s	EE	70s	EEEEEEE
020003	60s	EEEEE	70s	EEEEEEE
020004	60s	EEE	70s	EEEEEEE
020005	70s	F		
020006	70s	F		
020007	70s	F		
021001	50s	----------F	60s	EEEEEEEEF
021002	50s	F	60s	EEEEEEEEF
021003	50s	F	60s	EEEEEEEEE
	70s	EEEEEEEEE	80s	EF EEEE
021004	60s	FEEF		
021005	60s	-FEEEEEEEE	70s	EEEFEEEEEE
	80s	EF----EEEE		
021006	60s	-FEEEEEEE	70s	EEEEEEEEE
	80s	F------FFFF		
021007	80s	EEEE		
021009	80s	FEEEEEE	70s	EEEEEEEEE
	80s	F------EEEE		
021010	80s	FEEEEEE	70s	EF EE EE
	80s	E		
021011	80s	-----EEEE		
021014	60s	-FEEEEEEEE	70s	EEEEEEEEEE
	80s	F------EEEE		
021018	60s	---------FF	70s	EFFFFFFFFF
	80s	F------EFEE		
021019	60s	---------FE	70s	EEEEEEEEEF
	80s	F FFFF		
021020	80s	--- --EFFF		
021021	80s	----------F	70s	EEEEEEEEEE
	80s	F------EEEE		
021022	80s	F	70s	EEEEEEEEEE
	80s	F EEEE		
021025	70s	--FEEEEEFE	80s	F------EEEE
021030	80s	------FFFF		
021034	80s	------EEEE		
023001	50s	------FEEE	60s	EEEEFBACAA
	70s	CC		
023002	80s	CAAAA	70s	AC
023003	50s	F	80s	EEEEEBAAAA
	70s	AAAC		
023007	60s	CAAAA	70s	BCAC
023008	70s	CC		
023015	40s	FFFFFFF	50s	FEFEFEEEF
024001	60s	---------CA	70s	AC
024003	50s	----E	60s	EEEEEBACAA
	70s	AC-CC		
025001	50s	--- --FFFF	60s	EFFFFBAAAA
	70s	AC CAAAC		
025002	70s	FFFF		
025004	50s	---------FEE	60s	EEEEEBAACC
	70s	C		
025008	60s	------CAAB	70s	BAEF
026002	60s	FEEEE	70s	EEEEEEEEEE
	80s	EEEEEEEEEE	90s	B
027001	30s	--------FF-	40s	-FFFFF----
	50s	---FEFFFFF	60s	EEEEEEEF F
027002	50s	-----FFFFF	60s	EFFFFFFFFF
	70s	F		
027003	60s	FEEEEEEE	70s	EF
027004	80s	FEEEEEEEF		
027006	60s	-----FEEEE	70s	EF
027007	50s	---------FE	60s	EEEEEEEEEE
	70s	EF		
027009	60s	F	70s	EF
027012	50s	----FEEEEE	60s	EEEEEEEEEE
	70s	EF		
027013	50s	----FEEEEE	60s	EEEEEEEEFE
	70s	EF		
027015	60s	-----CAAC		
027018	50s	------FEEE	60s	EEEEEEEEEE
	70s	EEEF		
027019	50s	-------FEEE	60s	EEFEEEEEFF
	70s	FEF		
027021	60s	FFEEEEFEEE	70s	EF
027022	80s	----FEEEEE	70s	FF
027023	60s	---FEEEEF	70s	EF
027024	60s	FEEEF		
027025	60s	FEEEEEEEE	70s	EF
027026	60s	FEEEEF		
027027	60s	-FEEFFFEEF	70s	EEEF
027028	60s	EEEEEEEEE	70s	EF
027029	60s	FEEEFEEF		
027030	60s	FEEEEF	70s	EF
027031	60s	EEEEFE	70s	EF
027032	60s	FEEF		
028001	30s	--------FEE	40s	F---------F
	50s	EEEEEEEEE	60s	FEEEEBAAAA
	70s	AAAAACAA		
028002	40s	------FEEEE	50s	EFFFFFFFFF
	80s	EEEEFBAACC	70s	CC CC
030003	60s	------FF		
031001	40s	FEFFEF-----	50s	FFEEEF
	60s	EFFFFBAACA	70s	ABFEFFFFFF
031008	70s	FEEEEF		
031007	60s	-------- FF	70s	FF FF
031010	70s	FEEEF		
031012	70s	FFF		
031018	70s	-FEEEF		
031021	70s	-FFFFF		
032001	40s	FEEEEEEEEE	50s	EEEEEEEEEF
	60s	EEEEEEEEEE	70s	FEEEF
032002	30s	---------FF	40s	EFFFFEEEFF
	50s	EEEEEF----	60s	-FEEEEEEEE
	70s	EEEEEF		
032003	70s	FEEEEF		
032004	40s	---FEEEEEEE	50s	EEEEEEEEEE
	60s	EEEEFFEEEF	70s	FEEEEF
032008	30s	----------F	40s	EEEEEEEEEE
	50s	EEEEEEEEEE	60s	EEEEEEEEEF
032007	30s	----------F	40s	EEEEEEEEEE
	50s	EEEEEEEEEE	60s	EEEEEEEEEF
032008	40s	------FFEEE	50s	EEEEEEEEEE
	60s	EEEEEEFEEE	70s	EEEEEF
033001	50s	FEEEEF		
033002	60s	-FEEBAAAA	70s	AAAAAAA
033003	50s	FF-FEEF		
033004	40s	------FFFEE	50s	EEEEFEEF
033005	50s	--FEEEEEEE	60s	EEEEEEBBAA
	70s	AC		
033006	50s	------FEEE	60s	EEEEF
033007	50s	---FEEEEEE	60s	EEEFEECCCF
	70s	EF		
033011	60s	-FEEF		
033026	70s	-CAAAAC		
033035	50s	---------CA	60s	AAAABAAAAA
	70s	AAAAAC		
038001	30s	--CAAAAAAA	40s	AAAAAAAAAA
	70s	AAAAAAC		
038002	60s	CAAAAAAAAA	70s	AAAAAC
038003	60s	CAAAAAAAA	70s	AAAAAAC
038004	60s	CAAAA	70s	AAAAAAC
038005	60s	--CAAAAAAA	70s	AAAAAAC
038006	60s	--CAAAAAAA	70s	AAAAAAC
038007	60s	-- --CAAAA	70s	AAAAAAC
038008	60s	CAAAAAAAA	70s	AAAAAAC
038009	60s	---------CC	70s	AAAAAAC
038010	60s	---------CA	70s	AAAAAAC
038011	60s	---------CA	70s	AAAAAAC
038012	60s	---------CA	70s	AAAAAAC
038015	70s	--CAAAC		
037001	50s	CAAAAAAAAA	60s	AAAAAAAAC-
	70s	-CAAC		
037002	30s	--CAAAAAAA	40s	ACCAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAC		
037003	30s	--CAAAAAAA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AC--CAAAAA
	70s	AAAAAAC		
037004	30s	--DAAAAAAA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAA
037005	50s	----------C	60s	AAAAAAAAAA
	70s	AAAAAAC		
037006	60s	CAAAAAAA	70s	AAAAAAL
037007	60s	----CAAAAA	70s	AAAAAAC
037008	60s	-----CAAAA	70s	AAAAAAC
037009	60s	--CAAAAAAA	70s	AAAAAAC
037010	60s	--CAAAAAAA	70s	AAACLAC
037011	60s	---CAAAAAA	70s	AAAAACC
037012	80s	CAAAAAA	70s	AAAAAAC
037013	80s	CAAAAAA	70s	AAAAAAC
037014	80s	---CAAAAAA	70s	AAAAAC
037016	60s	CAAAA	70s	AAAACAC
037017	60s	----------C	70s	AAAACAC
037018	70s	CAAAC		
037019	60s	CAAAC	70s	AAAAC
037020	70s	CAAAAAC		
037021	70s	CAAAAAC		
037022	70s	CAAAAAC		
037024	70s	-CAAAAC		
038001	80s	DAAAAAA	90s	AAAAAAAAAA
	00s	AAAAAAAAAA	10s	AAAAAAAAAA
	20s	AAAAAAAAAA	30s	AAAAAAAAAA
	40s	AAAAAAAAAA	50s	AAAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAAC CA
	80s	AAAAAAAAAA	90s	AD
039001	80s	AAAAAAA	90s	AAAAAAAAAA
	00s	AAAAAAAAAA	10s	AAAAAAAAAA
	20s	AAAAAAAAAA	30s	AAAAAAAAAA
	40s	AAAAAAAAAA	50s	AAAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAAA	90s	AC
039002	30s	---------CA	40s	AAAAAAAAAA
	50s	AAAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	AD		
039008	50s	CAAAAAAAA	60s	AAAAAAAAAA
	70s	AAAAAAAAAA	80s	AAAAAAAAAA
	90s	AD		
039015	60s	----FBC		
039048	80s	D	90s	D
040001	50s	FEEEEF	60s	FEEFEEF
040002	50s	------FFEF	60s	FFFFFFEEF
040003	50s	-----CAAA	60s	AAAAAAAAAA
	70s	AAAAAAA		
040004	60s	FEEEEF		
040005	60s	FLE		
040006	60s	-----FEF		
040007	60s	FEEEEEFF		
040008	60s	-----FFF		
040009	60s	---- FFF		
040010	60s	---- FFF		
040011	80s	-----FFFF		
043005	80s	-----FEEFF	70s	FF
045003	80s	--FEEEEEF		
045004	80s	------CA	70s	C
045005	80s	---FEEEFCA	70s	C
046002	60s	FFFFFFEEF		
046003	60s	----CA	70s	C
046006	70s	AAAAAA	80s	AAAAAAA
047004	60s	FBCEFF		
047005	60s	C		
047016	50s	--------AAA	60s	AAAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAA
048001	60s	--FBACCC		
048002	60s	--FF---C		
048006	60s	---------CC		
048007	60s	---------CC		
49003	60s	CCC		
050001	50s	-- -- DA	60s	AAAAAAAAAA
	70s	AAAAAAAAA	80s	AAAAAAAAD
050002	80s	FEEBBBBA	70s	C
050006	60s	-----DAAAA	70s	AAAAAAAAAA
	80s	AAAAAAAAD		
051002	70s	---FEEEF		
052002	50s	FEEE	60s	EEEEEBEEF
052005	60s	-FEEEBEEE	70s	EEEEEEEF
052006	60s	---FEEEEEE	70s	EEEEEEEF
052014	60s	- FEE	70s	FEEEFFFF
053004	50s	--- ---HE	60s	EEEEEEEEFF
	70s	FEEEEEEAAA	80s	A
054001	20s	CAAAAAAAA	30s	AAAAAAAAAA
	40s	AAAAAAAAAA	50s	AAAAAAAAAA
	60s	AAAAAAAAAA	70s	AAAAAAAAAA
	80s	AAAAA		
054005	50s	FEE	60s	EEEEEEBAAC
	70s	AA		
054010	60s	CC		
054013	60s	CACA	70s	C------AA
054014	60s	CAA	70s	C------AA
054017	60s	CC		
055002	30s	--------FEE	40s	EEEEEEEEE
	50s	EEEEEEEEE	60s	EEEEEEEEE
	70s	AAAAAAAAA	80s	AAD
055008	30s	-----FEEEE	40s	EEEEEEEEE
	50s	EEEEEEEEE	60s	EEEEEEEEF
	70s	EEEEEEF		
055007	30s	---------FE	40s	EEEEEEEEE
	50s	EEEEEEEEE	60s	EEEEEEEEF
	70s	AAAAAAAAA	80s	ADA
056023	60s	----------F	70s	AAAAAAAAAA
	80s	AAA		
056001	50s	--------FEE	60s	EEEEEEEEE
	70s	FEEEEEEF		
056002	50s	--------FEE	60s	EEEEEEEEE
	70s	FEEEEF		
056003	60s	-----FEF		
056004	60s	-----FEEEE	70s	EFEEEEF
056006	60s	----FEEEEEE	70s	FFEEEEF
056011	70s	FEEEEFF		
056012	70s	-FEEEEF		
057001	50s	--FEEEEEEE	60s	EEEEEEEBC
057002	30s	--------FEE	40s	EEEEEEEEE
	50s	EEEEEEFEF-	60s	-FEEEEBAAA
	70s	C		
057003	80s	-----CAAAC		
057004	50s	-------FEE	60s	EFFEEBAAAC
058001	60s	---FEF---C	70s	C
058003	60s	--FEEF		
059001	50s	--------FE	60s	EEEEEBACC
061002	60s	FFFEEBCC		
062001	50s		60s	EEEEEEEF
064001	60s	-----FF		
068002	60s	-FEEEEEEE-	70s	FFF
068003	60s	---FEF-FE		
068011	60s	--------CA	70s	AC
067001	50s	-------FEE	60s	EEEEEEEEEA
	70s	AAAAAAAAAA	80s	AAAAAAA
067002	50s	---FEEEEE	60s	EEFEEEFFEF
067003	60s	--------FE	70s	FEEE
067008	60s	FEEEEEEEEF		
067015	60s	----------A	70s	AAAAAAAAAA
	80s	AAAAAAA--F		
067017	60s	----------E	70s	FF
067076	70s	----AAAAAA	80s	AAAAAAA
068001	60s	-FEEEEEFEF	70s	----E
068003	40s	----------F	50s	EEEEEEEEE
	60s	EEEEF------	70s	---FF
068004	60s	-FEEEEEEEF	70s	---FE
068005	60s	-FEEEEEFEF	70s	---FF
068008	60s	-FEEFEFFF	70s	F
069004	40s	-----FFFFF	60s	FFFFEEEEEE
	60s	EEEEEEEF		
071001	60s	CC		
072004	80s	----------F		
073010	80s	----------F		
075001	60s	----FEF		
075002	60s	-FEEEEF		
078001	50s	---FEEEF--	60s	FEEEEEEEE
	70s	F		
078003	60s	FEEEF		
078004	60s	FEEF		
078007	80s	F		
077002	60s	FEE	70s	EF
078004	70s	-F		
079002	50s	----------F	80s	EEEEEEEEE
	70s		EF	
079003	50s	--- -F	80s	EEEEEEEEE
	70s		EEF	
079006	60s	FEE	70s	EF
081003	60s	---------FE	70s	FF
082001	60s	---FFFFFFF	70s	EF
084001	70s	FEEEF		
084002	60s	---------FE	70s	EFFFF
084003	60s	-----FFEEF	70s	EEEEE
084004	50s	FEE	60s	EEEEEEEEEE
	70s	FEEEF		
084005	70s	----------FE	60s	EEEEEEEFFF
	80s	EEEEEF		
084008	70s	FEEEE		
084007	60s	--FEE	70s	FEEEF
084008	60s	--------FEE	70s	FEEEF
084009	60s	---------FF	70s	FFFEF
084011	80s	----FEEEEE	70s	EEEEE
084012	80s	FEEEEEE	70s	EEEEF
084013	60s	FLE	70s	EEEEF
084014	60s	----FEEEEE	70s	EEEEF
084015	70s	FEEEF		
084018	70s	FEEEF		
084017	80s	FEE	70s	EEEEF
084018	60s	F	70s	EEEEF
084019	60s	----------FE	70s	EEFFF
084020	70s	FEEEF		
084021	70s	FEF		
084022	70s	---FF		
084023	70s	---FF		
084024	70s	---FF		
084027	70s	---FF		
085001	60s	---FEEEEEE	70s	EFFFF
085002	60s	--------FEE	70s	FEEEF

Note: Stations are featured where five or more complete years of daily or monthly flows are archived

Produced October 1991, new summaries on request

GROUNDWATER LEVEL DATA

Background

Groundwater may be obtained from almost any stratum in the sedimentary succession in the British Isles, as well as from igneous and metamorphic rocks. In many, such as clays and shales, volcanics and metamorphics, the permeable zone may well be limited to the depth to which weathering may reach, this is unlikely to be more than some 50 metres beneath the ground surface. In those strata which are not generally recognised to be aquifers, well-yields tend to be small (of the order of only a few cubic metres per day), uncertain as a continuous source (tending to fail in prolonged droughts), with an indifferent groundwater quality, and with the sources vulnerable to pollution.

The more generally recognised aquifers are listed in Table 11, with the Chalk and Upper Greensand, the Lincolnshire Limestone and the Permo-Triassic sandstones as the most important from the viewpoint of public supply. From such aquifers as these, yields of 3000 to 4500 cubic metres a day are not unusual. For the next category, including the Lower Greensand and the Magnesian Limestone, yields to individual wells of 1500 to 3000 cubic metres a day can generally be expected. In the other aquifers, whilst occasional sources sufficient for large supplies may be developed, they tend to be important only locally. The outcrop areas of the major aquifers are shown in Figure 17; throughout Wales, Scotland and Northern Ireland, aquifers are less extensively developed and tend to be only of relatively local importance.

The groundwater resources of an aquifer are naturally replenished from rainfall. During the summer months, when the potential evapotranspiration is high and soil moisture deficits are appreciable, little infiltration takes place. There is a notable exception to this rule in the Eden valley of Cumbria where, enclosed between the massifs of Cross Fell and the Lake District, sufficiently heavy and continuous summer rainfall occurs to maintain infiltration through part at least of most summers. The normal recharge of an aquifer takes place during the winter months when the potential evapotranspiration is low and soil moisture deficits are negligible.

Only the largest artificial reservoirs in the United Kingdom have sufficient capacity to support demands through the driest summers, assuming that they were full at the start of the summer, without some continuous contributions from river intakes. Prolonged dry spells lead in many rivers to reduced flow, particularly where the natural groundwater contribution (baseflow) is limited. Consequently, while surface water droughts may be in part due to the failure of runoff from winter rainfall to fill the reservoirs, they are more frequently caused by a decrease in the summer flows of streams and rivers. Surface water droughts do, however, lead to increased consumption of groundwater (where available). By way of contrast, a groundwater drought is caused by a lack of winter rainfall. Potentially, the most serious droughts occur when, as in 1975/76, a dry summer succeeds a notably dry winter, or as in 1988–91 in eastern England, recharge is significantly below average over two or three successive winters.

The Observation Borehole Network

Groundwater level observation wells (in this context, a well includes both shafts – constructed by hand digging – and boreholes – constructed by machinery) are generally used for one of two purposes: to monitor levels regionally and thus to estimate groundwater resource fluctuations, or to monitor the effects locally of groundwater abstractions. The number of observation wells required in different areas varies widely. Over the last two decades, a target density was sought of one well to 25 to 35 km^2. During the last few years, it has become apparent in some districts that satisfactory information can be obtained with fewer wells, while in others the densities had to be substantially increased.

The observation well network was reviewed in 1981 by the British Geological Survey (then the Institute of Geological Sciences) with the aim of selecting 200 to 300 sites from the existing national Data Unit archive, to be used for periodical assessments of the national groundwater situation. The selection was based upon the hydrogeological units identified in an investigation of the groundwater resources of the United Kingdom[1]; one site was chosen for each aquifer present within each unit. For Scotland and for Northern Ireland this was not possible due to the very limited number of observation wells available. In England and Wales, the total number finally selected was 175[2].

Details of the wells in this national network are given in the Register of Selected Groundwater Observation Wells (see page 172).

Measurement and Recording of Groundwater Levels

The majority of observation wells are measured manually either weekly or monthly. The usual instrument is an electric probe suspended upon a graduated cable or tape, contact being made by the water to complete a circuit which gives either an audible or visual signal at the surface. Measurements are normally made to the nearest 10 millimetres, although instruments may be accurate to 1 mm.

Some observation wells are equipped with continuous water level recorders, almost invariably activated by a float on the water surface. These recorders may be driven by clockwork or by electric battery power, and are capable of running unattended for periods of one to six months. Levels are

TABLE 11 GENERALISED LIST OF AQUIFERS IN THE UNITED KINGDOM

Era	System	Subsystem	Aquifer	Importance
CAINOZOIC	Quaternary	Holocene	Superficial deposits	*
	Tertiary	Pleistocene	Upper and Middle Pleistocene	*
			Crag	**
		Pliocene	Coralline Crag	**
		Oligocene		
		Eocene	Bagshot Beds	
			Lower London Tertiaries	
			Blackheath & Oldhaven Beds	
			Woolwich & Reading Beds	*
			Thanet Beds	**
MESOZOIC	Cretaceous	Upper Cretaceous	Chalk and Upper Greensand	****
		Lower Cretaceous	Lower Greensand	***
			Hastings Beds	**
	Jurassic	Upper Jurassic	Portland & Purbeck Beds	*
			(with Spilsby Sandstone)	(**)
			Corallian	**
		Middle Jurassic	Great & Inferior Oolitic limestones	**
			(with Lincolnshire Limestone)	(****)
		Lower Jurassic	Bridport & Yeovil Sands	**
			Marlstone Rock	*
UPPER PALAEOZOIC	Triassic	Keuper	Permo-Triassic sandstones	
		Bunter		
	Permian	(sandstones)		
			Magnesian Limestone	***
	Carboniferous	Upper Carboniferous	Coal Measures	**
			Millstone Grit	**
		Lower Carboniferous	Carboniferous Limestone	**
	Devonian		Old Red Sandstone	*

Key to aquifer importance:
* aquifer of minor importance only
** aquifer producing small, but useful, local supplies
*** aquifer of local importance, often providing public supplies
**** aquifer of major importance

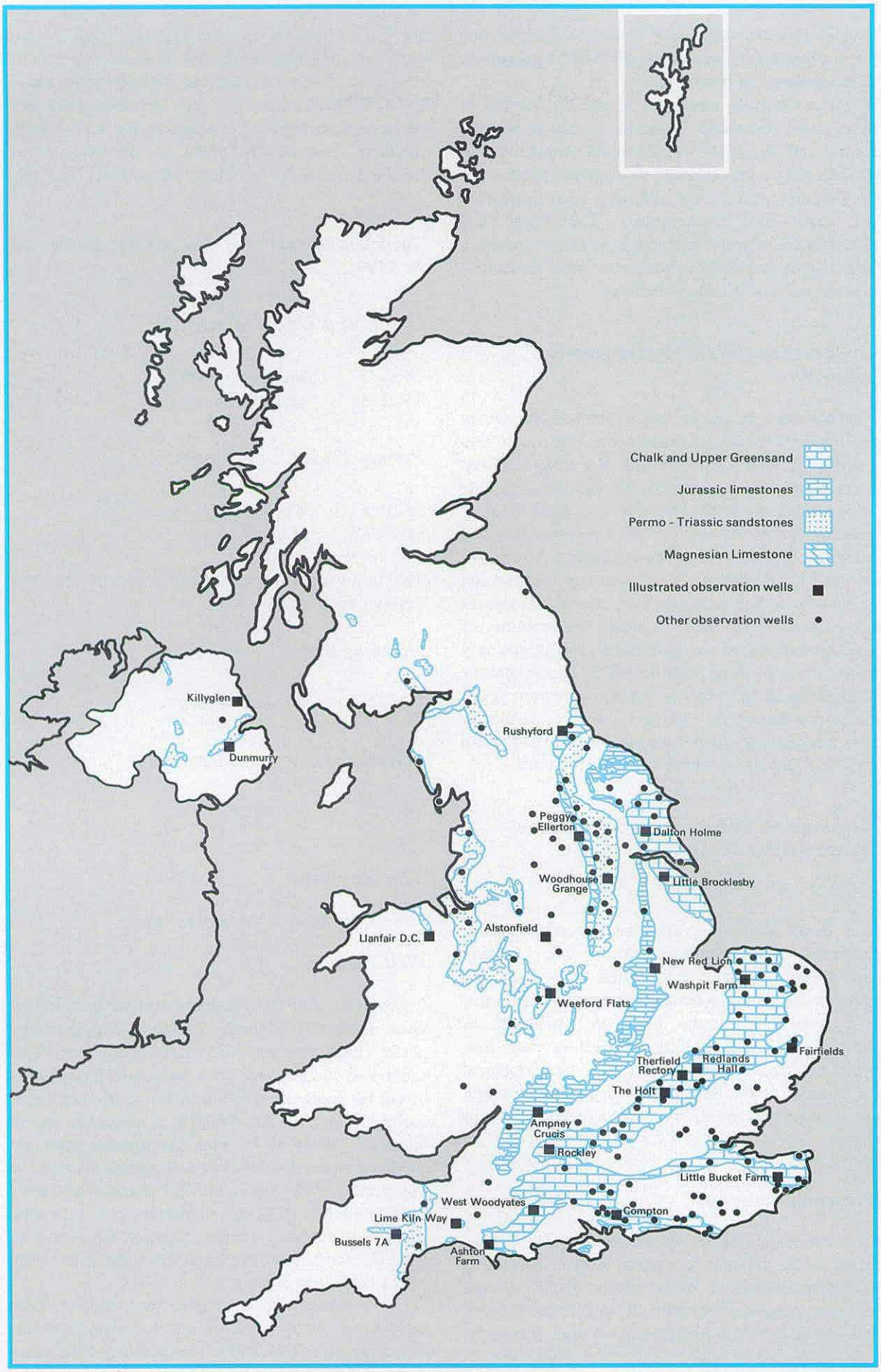


Figure 17. Principal aquifers and representative borehole locations.

usually recorded on paper charts or on punched paper tapes, but a number of solid state loggers have been deployed in recent years.

At a relatively small but increasing number of observation boreholes provision is made for the routine transmission - usually by telephone line - of groundwater levels to local, or regional, centres.

Pressure transducers have also been considered for water level measurement. The design and performance of pressure transducers has improved in recent years and they are being used more frequently but are still not yet in general use.

Observation Well Hydrographs 1988-90

Well hydrographs for 24 observation sites are shown in Figure 18; the format follows that used in the 1989 Yearbook*. For each borehole the 1988 to 1990 groundwater hydrographs are illustrated, as a blue trace, together with the average and extreme monthly levels for the pre-1990 record (provided sufficient historical data are available). A break in the well hydrograph trace indicates an interruption in the record of greater than eight weeks. Three-year plots have been used because the volume of groundwater stored in aquifers can reflect not only the infiltration taking place during the winter months of 1989/90, but also that occurring in previous years. When comparing the hydrographs for a number of sites, account should be taken of the differing scales used to illustrate the water-table fluctuations.

Register of Selected Groundwater Observation Wells

Scope

The listed sites were selected so as to give a reasonably representative cover for aquifers through-out England and Wales. The wells are grouped according to the aquifer to which the water level variations in the wells are attributed. A generalised list of aquifers is given on page 164, while the aquifers are tabulated in stratigraphical order, most of the local names for individual strata are omitted and the intervening aquicludes are not shown.

Network Changes

Since the original selection of boreholes for incorporation in the national network a number of changes have been made to the list of selected wells. At some locations, observations could no longer be continued, and new sites have been added from time to time. In the Coal Measures and the Millstone Grit, certain sites have not been monitored for some years due to the presence of methane in the wells; these sites have been discarded until either they have been made safe or have been replaced. Details of the wells in the national network are given in the Register of Selected Groundwater Observation Wells (see page 172).

The following sites have been added to the Register for 1990:

Chalk and Upper Greensand

TF83/1	South Creake School
TR24/36	Church House

Permo-Triassic sandstones

SK10/9	Weeford Flats
SK67/17	Morris Dancers

The following sites have been removed from the Register for 1990:

Hastings Beds

TQ32/19	Horsted Keynes

Permo-Triassic sandstones

SJ37/2H	Bowater 6

The Register

The six columns of the register are:

Well Number

The well numbering system is based on the National Grid. Each 100 kilometre square is designated by prefix characters, e.g. SE, and is divided into 100 squares of 10 kilometre sides designated by numbers 00 (in the south-west corner to 99 (in the north-east corner). Thus, the site SE93/4, is located in the 10 kilometre square SE93, while the number after the solidus denotes that the site is the fourth accessed in this square in the National Well Record collection. A suffix such as A, B, etc., defines the particular well when there are several at the same site. For Northern Ireland, which is on the Irish Grid, the first of the prefix characters is always 'I'.

Two asterisks following the well number indicates a well or borehole for which hydrographs are shown on pages 168 to 171. The location of the index wells, and the outcrop areas of the principal aquifers, are shown on Figure 17.

* NERC Computer Services was responsible for developing the hydrograph plotting software.

Grid Reference

The six or eight figure references given in the register relate to the 100 kilometre National (or Irish) Grid square designated by the preceding two - figure code; the corresponding two-letter code appears as the prefix characters in the Well Number. The Irish Grid References are italicised.

Site

The name by which the well or borehole is normally referenced. The location of all the sites listed in the register are shown on Figure 17.

Measuring Authority

An abbreviation referencing the organisation responsible for groundwater level measurement. A full list of codes, together with the corresponding names and addresses appears on pages 190 and 191.

Records Commence

The first year for which records are held for the groundwater archive.

Indicated % Annual Recharge

The difference between the level measured at the end of the summer recession of groundwater levels and that measured at the beginning of the summer recession of the following year reflects the amount of recharge received in that period. This method, detailed in the *Hydrometric Register and Statistics 1981–5* volume, is most suited to circumstances when a single peak is readily identifiable in each recharge season. Where recharge follows an uneven pattern resulting in poorly defined or multiple peaks, the percentage of the mean annual recharge is often unrepresentative. Consequently, the original method has been modified to produce more realistic values of recharge and to allow more accurate comparison between sites. First, the recharge period was defined as the first day of August to the end of the following July. Next, the water level at each site was estimated, by extrapolation where necessary, for the last day of each month. Finally all the rises in successive months were summed over each recharge period. The use of end-of-month levels was dictated to a large extent by the existence of end-of-month data alone for the longest pre-1990 records, and because many sites are measured at one-month intervals and others at weekly intervals; a single site when end-of-month and actual levels are compared tends to give significantly different annual recharge figures.

The summed rise for each year is called the 'annual fluctuation', and the mean of the annual fluctuations over the period of record is termed the 'mean annual infiltration' (MAR). This also assumes that the natural discharge (via, for instance, springs and seepages) is constant; while this is not the case in view of the large differences of head that are recorded in some observation wells, there is insufficient information currently available to permit corrective factors to be detemined. It is considered that the errors caused by this assumption will be small.

The annual infiltration is then expressed as a percentage of the MAR, and so appears in the last column of the Register. Exceptionally low percentage recharge values are conventionally presented as '<10'.

References

Monkhouse, R.A. and Richards, H.J. 1983. Groundwater resources of the United Kingdom. Commission of the European Communities, pub. Th. Schaeffer Druckerei GmbH, Hannover, 252 pages.

2. Monkhouse, R.A. and Murti, P.K. 1981. The rationalisation of groundwater observation well networks in England and Wales. Institute of Geological Sciences, Report No. WD/81/1, 18 pages.

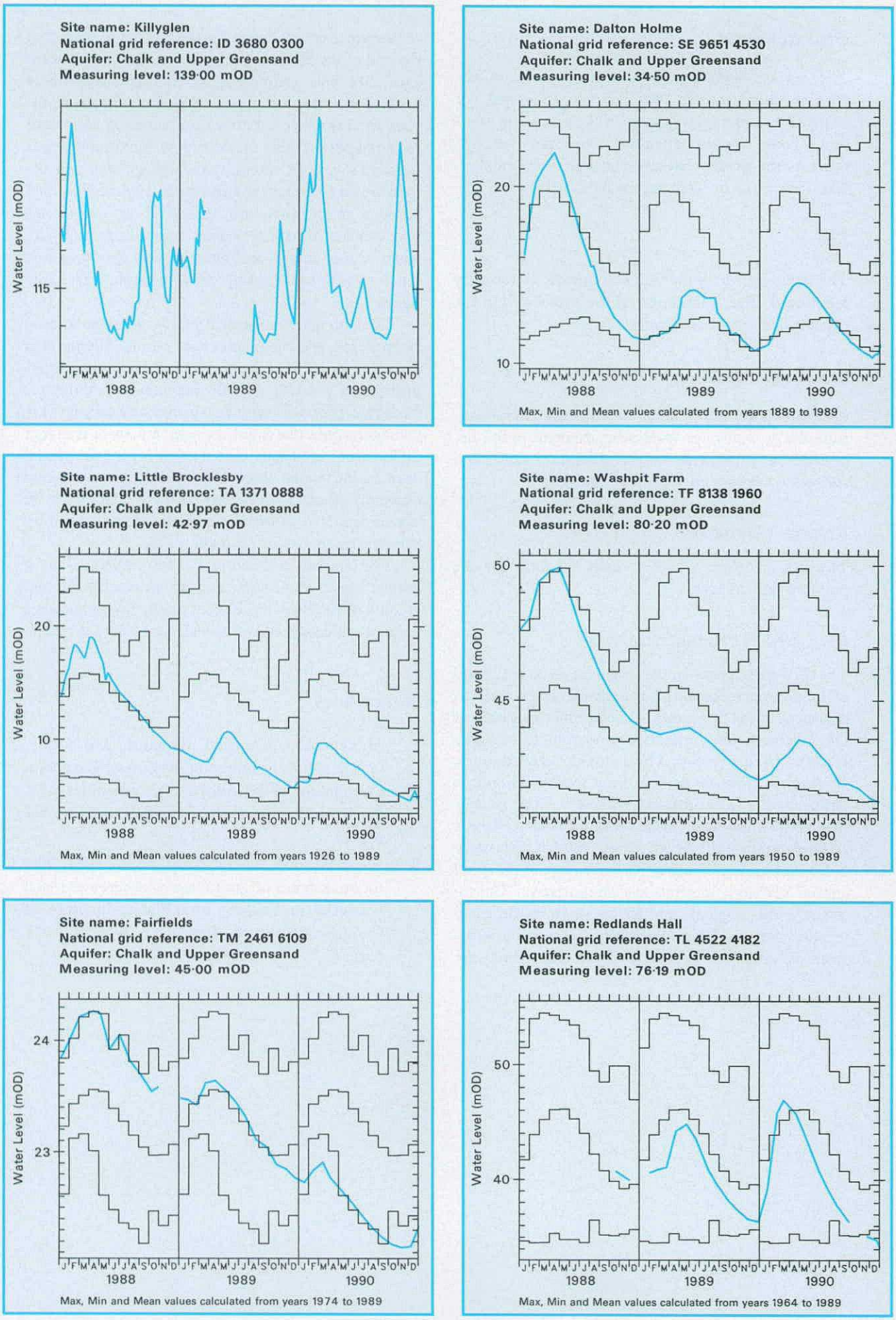
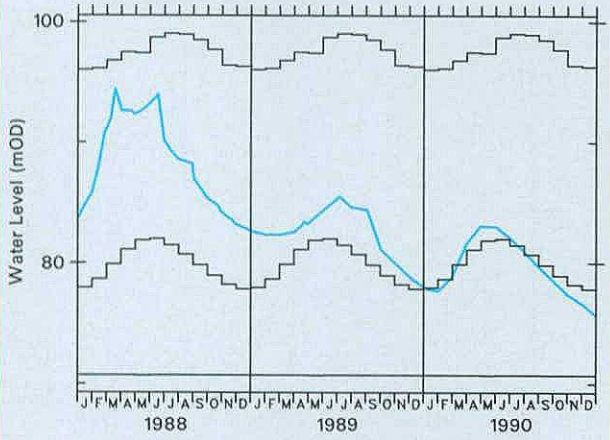


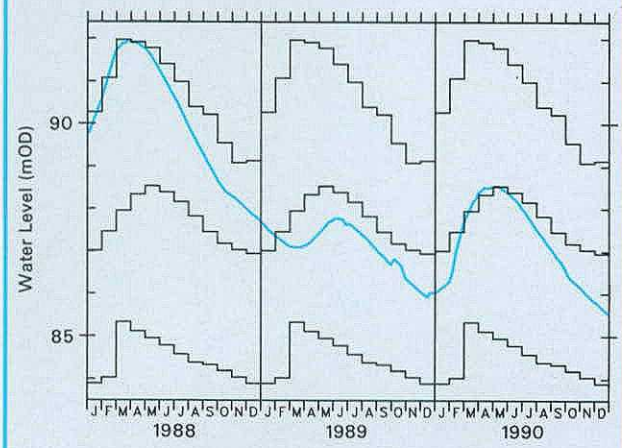
Figure 18. Hydrographs of groundwater level fluctuations.

Site name: Therfield Rectory
National grid reference: TL 3330 3720
Aquifer: Chalk and Upper Greensand
Measuring level: 154·82 mOD



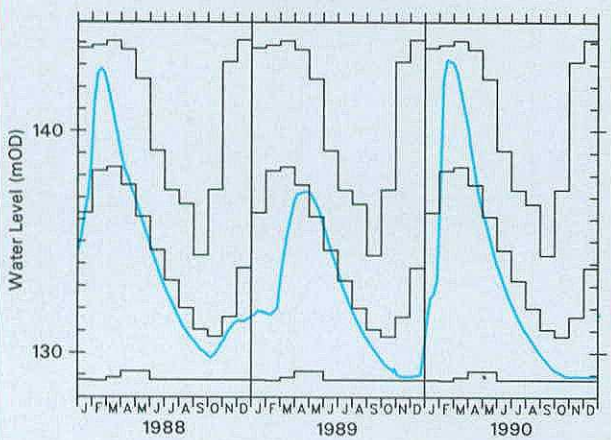
Max, Min and Mean values calculated from years 1883 to 1989

Site name: The Holt
National grid reference: TL 1692 1965
Aquifer: Chalk and Upper Greensand
Measuring level: 138·17 mOD



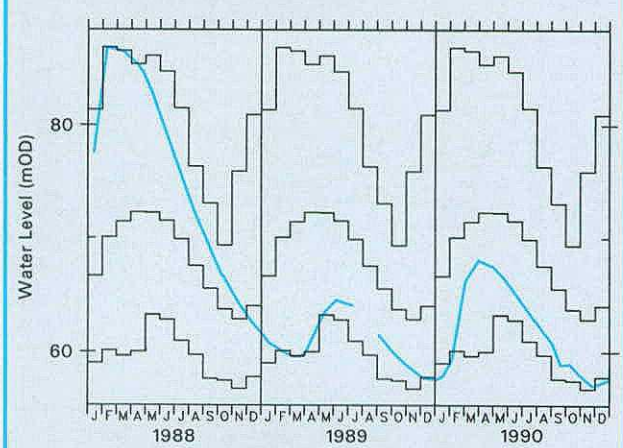
Max, Min and Mean values calculated from years 1964 to 1989

Site name: Rockley
National grid reference: SU 1655 7174
Aquifer: Chalk and Upper Greensand
Measuring level: 146·39 mOD



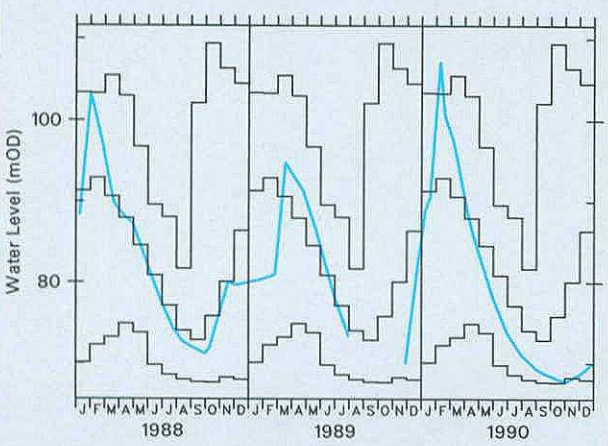
Max, Min and Mean values calculated from years 1933 to 1989

Site name: Little Bucket Farm
National grid reference: TR 1225 4690
Aquifer: Chalk and Upper Greensand
Measuring level: 87·33 mOD



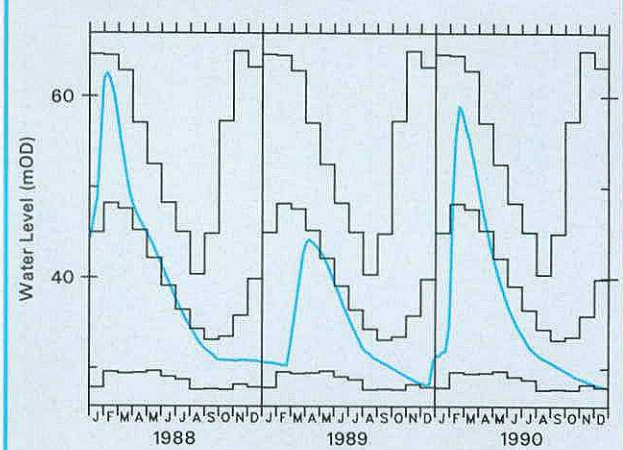
Max, Min and Mean values calculated from years 1971 to 1989

Site name: West Woodyates Manor
National grid reference: SU 0160 1960
Aquifer: Chalk and Upper Greensand
Measuring level: 110·88 mOD



Max, Min and Mean values calculated from years 1942 to 1989

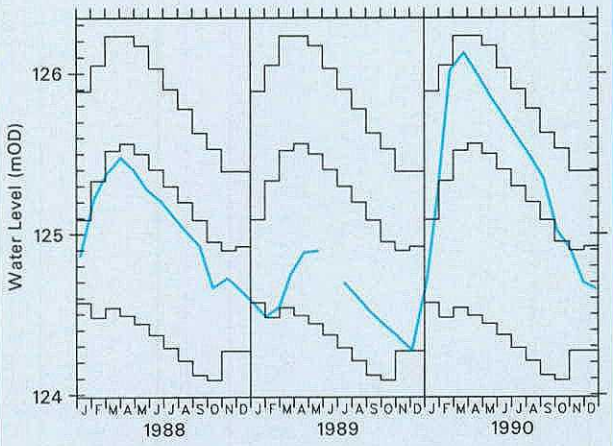
Site name: Compton House
National grid reference: SU 7755 1490
Aquifer: Chalk and Upper Greensand
Measuring level: 81·37 mOD



Max, Min and Mean values calculated from years 1893 to 1989

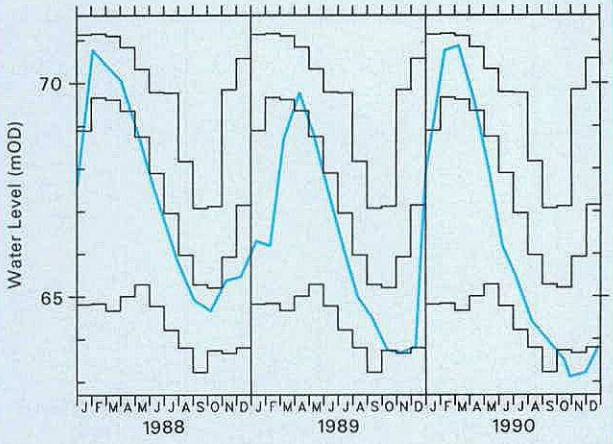
Figure 18—(continued)

Site name: Lime Kiln Way
National grid reference: ST 3763 0667
Aquifer: Chalk and Upper Greensand
Measuring level: 130·19 mOD



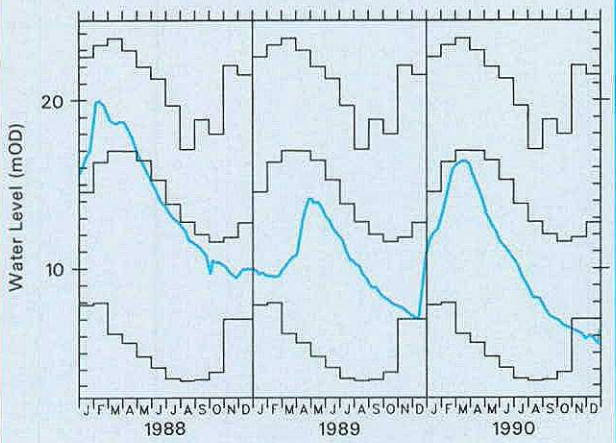
Max, Min and Mean values calculated from years 1969 to 1989

Site name: Ashton Farm
National grid reference: SY 6620 8810
Aquifer: Chalk and Upper Greensand
Measuring level: 72·16 mOD



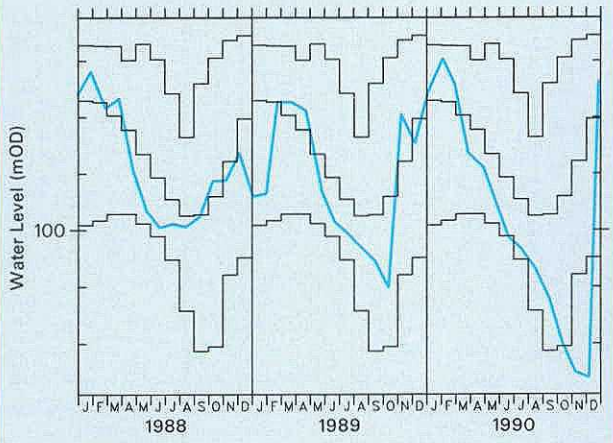
Max, Min and Mean values calculated from years 1974 to 1989

Site name: New Red Lion
National grid reference: TF 0885 3034
Aquifer: Lincolnshire Limestone
Measuring level: 33·45 mOD



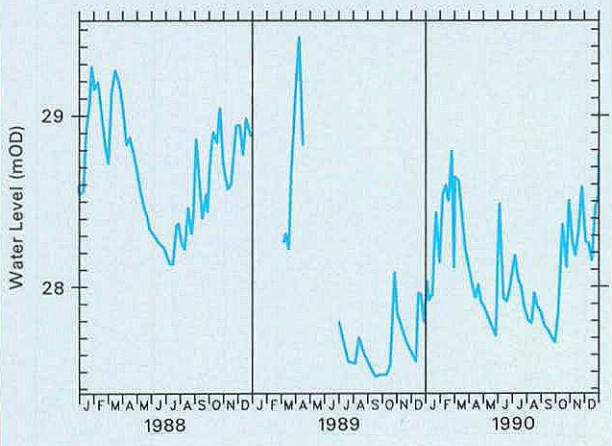
Max, Min and Mean values calculated from years 1964 to 1989

Site name: Ampney Crucis
National grid reference: SP 0595 0190
Aquifer: Middle Jurassic
Measuring level: 109·54 mOD



Max, Min and Mean values calculated from years 1958 to 1989

Site name: Dunmurry
National grid reference: IJ 2910 6940
Aquifer: Permo-Triassic Sandstone
Measuring level: 32·86 mOD



Site name: Woodhouse Grange
National grid reference: SE 6784 0709
Aquifer: Permo-Triassic Sandstone
Measuring level: 4·35 mOD

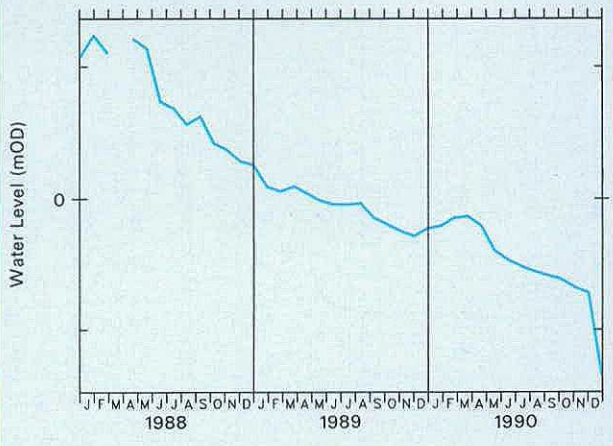
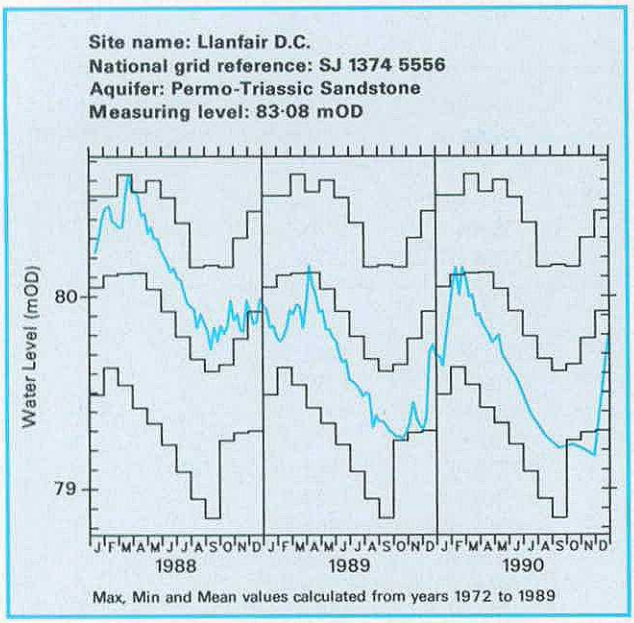
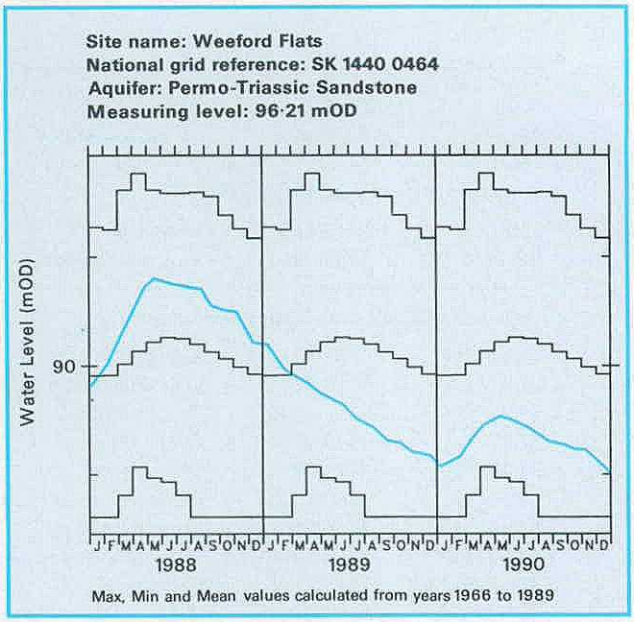
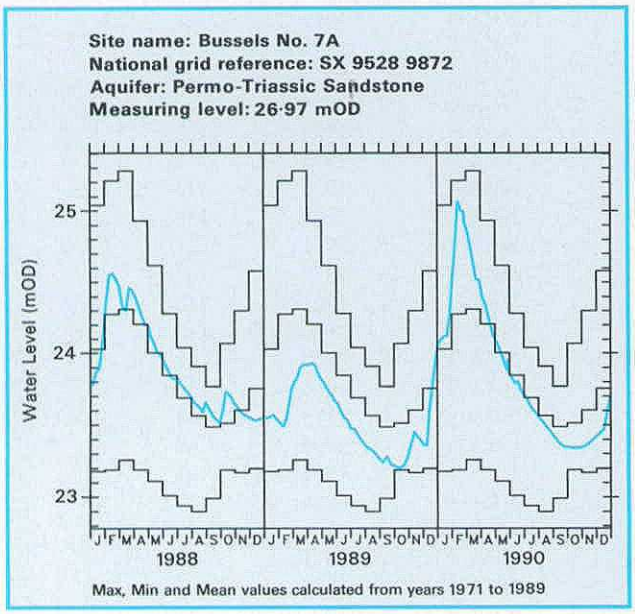
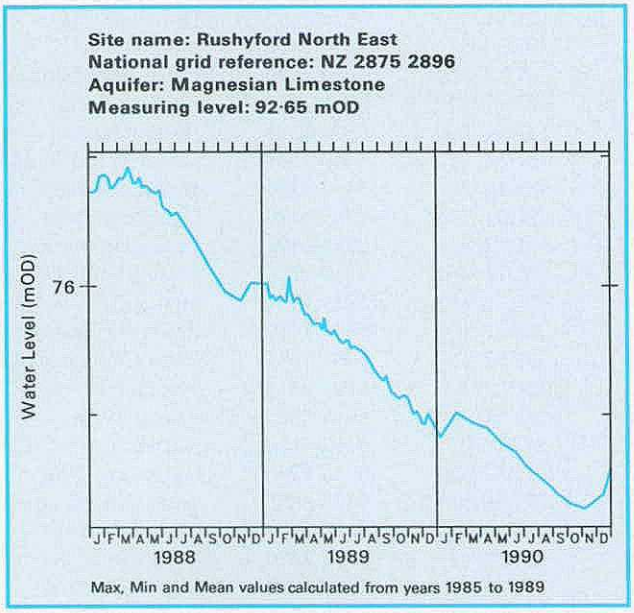


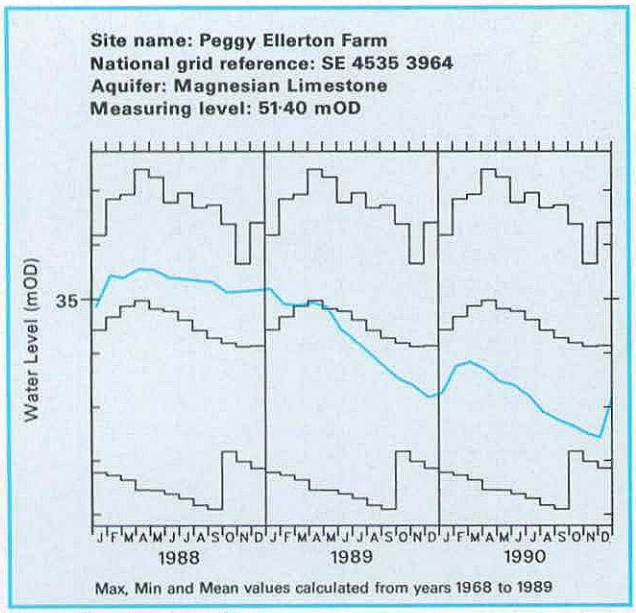
Figure 18—(continued)











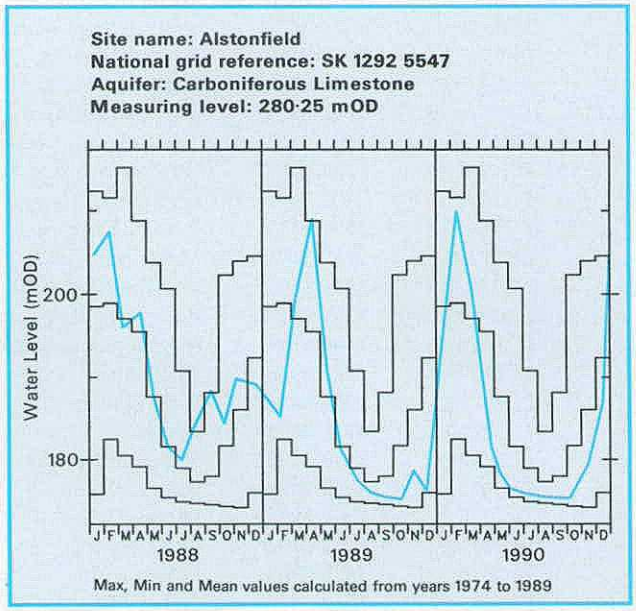


Figure 18—(continued)

Well Number	Grid Reference	Site.	Measuring Authority	Records Commence	Indicated % Annual Recharge 1989/90
Aquifer: Superficial Deposits					
IJ28/1	*2248 8620*	Dunadry	GSNI	1985	83
SO44/4	4683 4253	Stretton Sugwas	NRA-WEL	1973	---
Aquifer : Chalk and Upper Greensand					
ID30/1**	*3663 0310*	Killyglen	GSNI	1985	121
SE93/4	9212 3634	Dale Plantation	NRA-Y	1970	32
SE94/5**	9651 4530	Dalton Holme	NRA-Y	1889	59
SE97/31	9345 7079	Green Lane	NRA-Y	1972	39
SP90/26	9470 0875	Champneys	NRA-T	1962	122
SP91/59	9380 1570	Pitstone Green Farm	NRA-A	1970	75
ST30/7**	3763 0667	Lime Kiln Way	NRA-SW	1969	---
SU01/5B**	0160 1946	West Woodyates Manor	NRA-W	1942	116
SU17/57**	1655 7174	Rockley	NRA-T	1933	142
SU32/3	3817 2743	Bailey's Down Farm	NRA-S	1963	147
SU35/14	3315 5645	Woodside	NRA-S	1963	144
SU51/10	5875 1655	Hill Place Farm	NRA-S	1965	152
SU53/94	5586 3498	Abbotstone	NRA-S	1976	185
SU57/159	5628 7530	Calversleys Farm	NRA-T	1973	121
SU61/32	6578 1775	Chidden Farm	NRA-S	1958	130
SU61/46	6890 1532	Hinton Manor	NRS-S	1953	128
SU64/28	6360 4049	Lower Wield Farm	NRA-S	1958	228
SU68/49	6442 8525	Well Place Farm	NRA-T	1976	243
SU71/23**	7755 1490	Compton House	NRA-S	1893	139
SU73/8	7048 3491	Faringdon Station	NRA-T	1961	151
SU76/46	7367 6251	Riseley Mill	NRA-T	1975	187
SU78/45A	7419 8924	Stonor Park	NRA-T	1961	148
SU81/1	8356 1440	Chilgrove House	NRA-S	1836	145
SU87/1	8336 7885	Farm Cottage, Coldharbour	NRA-T	1950	181
SU89/7	8103 9417	Piddington	NRA-T	1966	140
SY68/34**	6615 8805	Ashton Farm	NRA-W	1974	128
TA06/16	0490 6120	Nafferton	NRA-Y	1964	42
TA07/28	0940 7740	Hunmanby Hall	NRA-Y	1976	33
TA10/40**	1375 0885	Little Brocklesby	NRA-A	1926	59
TA21/14	2670 1890	Church Farm	NRA-Y	1971	41
TF72/11	7710 2330	Off Farm	NRA-A	1971	85
TF73/10	7690 3290	Moor Farm	NRA-A	1977	83
TF80/33	8738 0526	Houghton Common	NRA-A	1971	51
TF81/2**	8138 1960	Washpit Farm	NRA-A	1950	76
TF83/1	8578 3606	South Creake school	NRA-A	1952	76
TF92/5	9869 2183	Tower Hills P.S.	NRA-A	1977	60
TG00/92	0440 0020	High Elm Farm,	NRA-A	1971	56
TG03/25B	0382 3583	The Hall, Brinton	NRA-A	1952	86
TG11/5	1691 1101	The Spinney, Costessey	NRA-A	1952	75
TG12/7	1126 2722	Heydon Pumping Station	NRA-A	1974	61
TG21/9	2400 1657	Frettenham Depot	NRA-A	1952	85
TG21/10	2699 1140	Grange Farm	NRA-A	1952	17
TG23/21	2932 3101	Melbourne House	NRA-A	1974	31
TG31/20	3365 1606	Woodbastwick	NRA-A	1974	65
TG32/16	3700 2682	Brumstead Hall	NRA-A	1978	52
TL11/4	1560 1555	Mackerye End House	NRA-T	1960	135
TL11/9**	1692 1965	The Holt	NRA-T	1964	117
TL13/24	1200 3026	West Hitchin	NRA-A	1970	188
TL22/10	2978 2433	Box Hall	NRA-T	1964	83
TL33/4**	3330 3720	Therfield Rectory	NRA-T	1883	94
TL42/6	4536 2676	Hixham Hall	NRA-T	1964	91
TL42/8	4669 2955	Berden Hall	NRA-T	1964	84
TL44/12	4522 4182	Redlands Hall	NRA-A	1964	123
TL55/109	5925 5605	Lower Farm	NRA-A	1983	90
TL72/54	7982 2516	Rectory Road	NRA-A	1968	221
TL84/6	8465 4106	Smeetham Cottages, Bulmer	NRA-A	1963	85

Well Number	Grid Reference	Site	Measuring Authority	Records Commence	Indicated % Annual Recharge 1989/90
TL86/110	8850 6470	Cattishall Farm	NRA-A	1969	240
TL89/37	8131 9001	Grimes Graves	NRA-A	1971	91
TL92/1	9657 2562	Lexden Pumping Station	NRA-A	1961	97
TM15/112	1201 5618	Dial Farm	NRA-A	1968	30
TM17/1	1671 7903	Old Parsonage House	NRA-A	1952	95
TM26/46**	2461 6109	Fairfields	NRA-A	1974	17
TM26/95	2786 6397	Strawberry Hill	NRA-A	1974	10
TQ01/133	0850 1170	Chantry Post, Sullington	NRA-S	1977	94
TQ21/11	2850 1289	Old Rectory, Pyecombe	NRA-S	1958	187
TQ28/119B	2996 8051	Trafalgar Square	NRA-T	1845	---
TQ31/50	3220 1180	North Bottom	NRA-S	1979	105
TQ35/5	3363 5924	Rose & Crown	NRA-T	1876	183
TQ38/9	3509 8536	Hackney Public Baths	NRA-T	1953	---
TQ50/7	5592 0380	Old Rectory, Folkington	NRA-S	1965	156
TQ56/19	5648 6124	West Kingsdown	NRA-T	1961	86
TQ57/118	5880 7943	Thurrock A13	NRA-A	1979	139
TQ58/2B	5622 8408	Bush Pit Farm	NRA-T	1967	127
TQ86/44	8595 6092	Little Pett Farm	NRA-S	1982	74
TQ99/11	9470 9710	Burnham	NRA-A	1975	49
TR14/9**	1225 4690	Little Bucket Farm	NRA-S	1971	88
TR14/50	1265 4167	Glebe Cottage	NRA-S	1970	86
TR24/36	2787 4003	Church House	NRA-S	1971	142
TR35/49	3330 5090	Cross Manor Cottages	NRA-S	1971	69
TR36/62	3208 6634	Alland Grange	NRA-S	1969	93
TV59/7C**	5290 9920	Westdean 3	NRA-S	1940	119
Aquifer : Lower Greensand					
SU82/57	8888 2505	Madam's Farm	NRA-S	1984	66
SU84/8A	8716 4087	Tilford Pumping Station	NRA-T	1971	178
TL45/19	4110 5204	River Farm	NRA-A	1973	152
TQ41/82	4370 1320	Lower Barn Cottages	NRA-S	1975	113
TR13/21	1132 3881	Ashley House	NRA-S	1972	112
TR23/32	2075 3650	Morehall Depot	NRA-S	1972	67
Aquifer : Hastings Beds					
TQ22/1	2348 2770	The Bungalow	NRA-S	1964	200
TQ42/80A	4725 2990	Kingstanding	NRA-S	1979	143
TQ61/44	6658 1803	Dallington Herrings	NRA-S	1964	118
TQ62/99	6199 2282	Whiteoaks	NRA-S	1978	84
TQ71/123	7969 1659	Red House	NRA-S	1974	124
Aquifer : Upper Jurassic					
SE68/16	6890 8590	Kirkbymoorside	NRA-Y	1973	46
SE77/76	7690 7300	Broughton	NRA-Y	1975	66
SE98/8	9910 8540	Seavegate Farm	NRA-Y	1971	111
SU49/40B	4117 9307	East Hanney	NRA-T	1978	110
Aquifer : Middle Jurassic					
SP00/62**	0595 0190	Ampney Crucis	NRA-T	1958	99
SP20/113	2721 0634	Alvescot Road	NRA-T	1975	102
ST51/57	5931 1691	Over Compton	NRA-W	1971	139
ST88/62A	8275 8743	Didmarton 1	NRA-W	1977	130
Aquifer : Lincolnshire Limestone					
SK97/25	9800 7817	Grange de Lings	NRA-A	1975	87
TF03/37**	0885 3034	New Red Lion	NRA-A	1964	109
TF04/14	0429 4273	Silk Willoughby	NRA-A	1972	116
Aquifer : Permo-Triassic sandstones					
IJ26/1**	2907 6943	Dunmurry	GSNI	1985	111
NX97/1	9667 7432	Redbank	SRPB	1981	48
NY00/328	0511 0247	Brownbank Layby	NRA-NW	1974	155
NY45/16	4947 5667	Corby Hill	NRA-NW	1977	37

Well Number	Grid Reference	Site	Measuring Authority	Records Commence	Indicated % Annual Recharge 1988/89
NY63/2	6130 3250	Skirwith	NRA-NW	1978	148
NZ41/34	4861 1835	Northern Dairies	NRA-N	1974	52
SD27/8	2172 7171	Furness Abbey	NRA-NW	1972	94
SD41/32	4400 1164	Yew Tree Farm	NRA-NW	1971	94
SD44/15	4396 4928	Moss Edge Farm	NRA-NW	1961	111
SE36/47	3945 6575	Kelly's Cafe	NRA-Y	1977	51
SE39/20B	3004 9244	Scruton Village	NRA-Y	1969	50
SE45/3	4470 5580	Cattal Maltings	NRA-Y	1969	152
SE52/4	5473 2363	Southfield Lane	NRA-Y	1955	59
SE54/32A	5532 4646	Bilborough	NRA-Y	1984	50
SE55/4	5829 5383	Clifton Hospital	NRA-Y	1967	238
SE60/76**	6784 0709	Woodhouse Grange	NRA-ST	1980	30
SE64/1	6751 4463	Wheldrake Station	NRA-Y	1971	---
SE72/3B	7047 2149	Rawcliffe Bridge	NRA-Y	1971	93
SE83/9	8040 3640	Holme on Spalding Moor	NRA-Y	1972	30
SJ15/15**	1374 5556	Llanfair D.C.	NRA-WEL	1972	114
SJ33/39**	3814 3831	Eastwick Farm	NRA-WEL	1974	101
SJ56/45E	5042 6953	Ashton 4	NRA-NW	1969	< 10
SJ83/1A	8969 3474	Stone	NRA-ST	1974	86
SJ87/32	8969 7598	Dale Brow	NRA-NW	1973	101
SJ88/93	8611 8645	Bruntwood Hall	NRA-NW	1972	25
SK00/41	0670 0120	Nuttal's Farm	NRA-ST	1974	79
SK10/9	1440 0464	Weeford Flats	NRA-ST	1966	70
SK21/111	2731 1419	Grange Wood	NRA-ST	1967	194
SK24/22	2539 4431	Burtonshuts Farm	NRA-ST	1972	< 10
SK56/53	5632 6440	Peafield Lane	NRA-ST	1969	< 10
SK67/17	6448 7257	Morris Dancers	NRA-ST	1970	---
SK68/21	6100 8374	Crossley Hill	NRA-ST	1969	16
SK73/50	7693 3228	Woodland Farm	NRA-ST	1980	13
SO71/18	7170 1970	Stores Cottage	NRA-ST	1973	93
SO87/28	8160 7970	Hillfields	NRA-ST	1961	144
SX99/37B**	9528 9872	Bussels 7A	NRA-SW	1971	155
SY09/21A	0666 9235	Heathlands	NRA-SW	1951	94
Aquifer : Magnesian Limestone					
NZ22/22**	2875 2896	Rushyford NE	NRA-N	1967	16
NZ32/19	3575 2650	Heley House	NRA-N	1969	40
NZ33/20	3349 3501	Garmondsway	NRA-N	1974	42
SE28/28	2460 8520	Bedale	NRA-Y	1972	104
SE35/4	3830 5830	Castle Farm	NRA-Y	1970	52
SE43/9**	4535 3964	Peggy Ellerton Farm	NRA-Y	1968	48
SE43/14	4660 3550	Coldhill Farm 35	NRA-Y	1971	103
SE51/2	5210 1530	Westfield Farm	NRA-Y	1971	65
SK46/71	4800 6030	Stanton Hill	NRA-ST	1973	101
SK58/43	5248 8018	Southeads Lane	NRA-ST	1973	---
Aquifer : Coal Measures					
SE23/4	2850 3414	Silver Blades Ice Rink	NRA-Y	1971	85
Aquifer : Millstone Grit					
SE02/46	0771 2528	Thrum Hall	NRA-Y	1977	87
SE04/7	0295 4792	Lower Heights Farm	NRA-Y	1971	133
SE24/2B	2067 4053	Green Lane Dyeworks	NRA-Y	1971	191
SE27/8	2120 7380	Kirkby Moor Farm	NRA-Y	1971	34
Aquifer : Carboniferous Limestone					
NT95/21	9695 5055	Middle Ord	NRA-N	1974	64
SE06/1	0241 6183	Jerry Laithe Farm	NRA-Y	1971	20
SK15/16**	1292 5547	Alstonfield	NRA-ST	1974	94
SK17/13	1778 7762	Hucklow South	NRA-ST	1969	86
ST64/33	6560 4790	Oakhill 1	NRA-W	1974	64

Sites marked '**' are indicator wells; well hydrographs are shown in Figure 18. Where the annual percentage recharge cannot be estimated, the entry '---' is substituted.

THE GROUNDWATER DATA RETRIEVAL SERVICE

A suite of retrieval programs has been written in order to facilitate data usage. Retrievals using the options described below are available for all of the sites listed in the Register of Selected Groundwater Observation Wells, although not all the data contained within this archive have been validated.

Five options are available for retrieving data. A description of each option is given below and examples of the computer listings and graphical output are given on pages 176 to 178. Options 1 to 4 give details of the well site, the period of record available, and maximum and minimum recorded levels in addition to the output specific to each option. Data may be retrieved for a specific well or for groups of wells by well reference numbers, by area (using National Grid References), by aquifer, by hydrometric area, by measuring authority, or by any combination of these parameters.

Cost of Service

To cover the computing and handling costs, a moderate charge will be made depending on the output options selected. Estimates of these charges may be obtained on request; the right to amend or waive charges is reserved.

Requests for Retrieval Options

Requests for retrieval options should include: the name and address to which the output should be directed, the sites, or areas, for which data are required together with the period of record of interest (where appropriate) and the title of the required option. Where possible, a daytime telephone number should be given.

Requests should be addressed to:

The British Geological Survey
Hydrogeology Research Group
WALLINGFORD
OXFORDSHIRE OX10 8BB

Telephone: (0491) 38800
Fax: (0491) 25338

LIST OF GROUNDWATER RETRIEVAL OPTIONS

OPTION	TITLE	NOTES
1	Table of groundwater levels	All recorded observations of groundwater level in metres above Ordnance Datum, with dates of observation and maximum and minimum levels for each year. Specific years, or ranges of years, may be requested, otherwise the full period of record is given.
	Table of annual maximum and minimum groundwater levels	Annual maximum and minimum groundwater levels in metres above Ordnance Datum with dates of occurrence. Specific years, or ranges of years, may be requested, otherwise the full period of record is given.
	Table of monthly maximum, minimum and mean groundwater levels	Monthly maximum, minimum and mean groundwater levels in metres above Ordnance Datum, together with the number of years contributing values to the calculation of each monthly mean. A specific period of years may be nominated, otherwise the full period of record is given.
	Hydrographs of groundwater levels	Provides a well hydrograph for a number of specified years. Castellated annual plots of monthly maximum and mean groundwater levels calculated from a nominated period of years are superimposed upon the hydrograph, provided that the nominated period exceeds 10 years. Tabulations of the monthly

maximum, minimum and mean values are also listed, together with the number of years of record used in the calculations, and the number of observations used for each month.

Site details

The output comprises the well reference number of the British Geological Survey, the original (Water Data Unit) station number (where applicable), the hydrometric area, the aquifer name and code, the site name and location, the National Grid Reference, the depth of the well, the datum points (from which measurements are made), the altitude of the ground surface, the period of record and the measuring authority area in which the well or borehole is located.

OPTION 1 TABLE OF GROUNDWATER LEVELS

Station number	TF03/37
Station name	NEW RED LION, ASLACKBY (CONTINUES OLD RED LION)
Grid Reference_ _ _	TF 0885 3034
Measuring Authority	NRA-A
Hydrometric Area	30
Aquifer	Lincolnshire Limestone
Aquifer Code	13
EEC Unit	ANO3
Surface Level (MOD)	33.82
Datum Point (MOD)	33.45
Well Depth (M)	50.00
Max. Expected (MOD)	33.45
Min. Expected (MOD)	5.00
Period of records in Archive:-	1964 to 1985

Maximum GW Level for period of records 23.69
Number of Maxima 1
Date(s):-
14 03 1977

Minimum GW Level for period of records 3.29
Number of Minima 1
Date(s):-
24 08 1976

(Note: The above reference information is also provided with the output from options 2-4)

Station Number	TF03/37
Year of record	1975
Date	Level (MOD)
03 Jan	17.29
31 Jan	16.68
28 Feb	17.85
04 Apr	20.31
24 Apr	20.12
02 May	20.13
30 May	18.58
13 Jun	17.34
11 Jul	15.77

01 Aug	14.44
29 Aug	13.24
26 Sep	12.11
10 Oct	11.57
07 Nov	10.42
21 Nov	9.85
19 Dec	8.98

Maximum GW level for year 20.31
Number of maxima 1
Dates 04 Apr
Minimum GW Level for year 8.98
Number of minima 1
Dates 19 Dec

OPTION 2 TABLE OF ANNUAL MAXIMUM AND MINIMUM GROUNDWATER LEVELS

Year	Max/Min	Level(MOD)	Date(s)	No. of occasions
1965	Max	21.50	26 Dec	1
	Min	7.85	24 Jan	
1966	Max	23.51	06 Mar	1
	Min	14.43	09 Oct-16 Oct	1 Period
1967	Max	19.79	04 Jun	
	Min	12.69	29 Oct	
1968	Max	22.06	17 Nov	
	Min	14.08	07 Jul	
1969	Max	23.17	30 Mar	
	Min	11.83	16 Nov	
1970	Max	20.21	26 Apr	
	Min	10.76	15 Nov	1

OPTION 3 TABLE OF MONTHLY MAXIMUM, MINIMUM AND MEAN GROUNDWATER LEVELS

Period maximum, minimum and mean groundwater levels for years 1964 to 1985

	Maximum	Minimum	Mean	No. of years
Jan	22.58	7.85	14.75	21
Feb	23.29	7.97	16.50	21
Mar	23.69	6.14	17.27	21
Apr	22.97	5.61	17.17	22
May	22.00	4.80	16.52	21
Jun	21.28	4.11	15.40	21
Jul	19.69	3.42	14.03	21
Aug	17.08	3.29	12.97	21
Sep	18.84	3.37	12.23	21
Oct	17.98	3.82	11.78	21
Nov	22.06	7.03	12.08	21
Dec	21.51	7.81	13.04	21

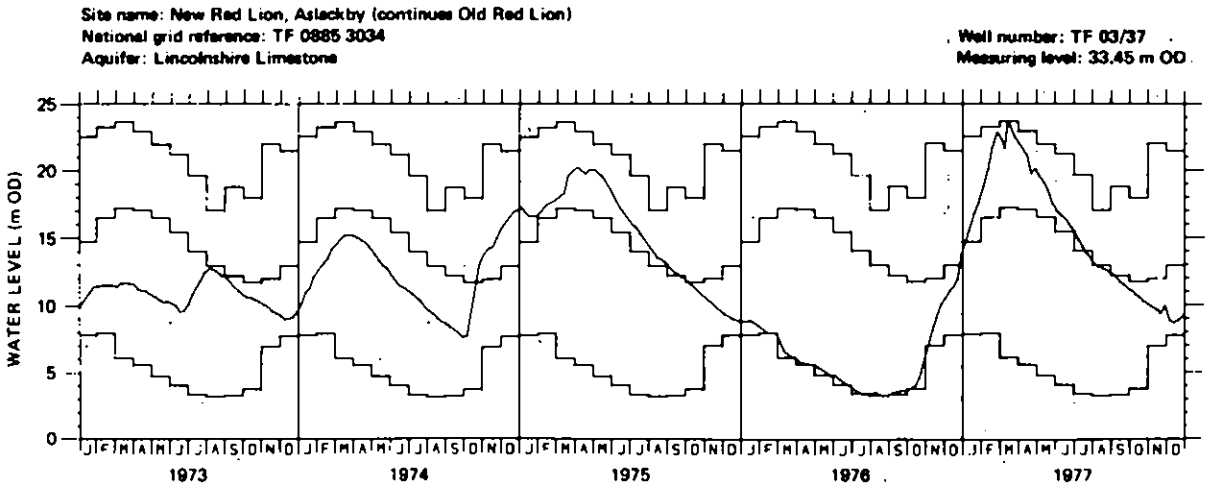
OPTION 4 HYDROGRAPHS OF GROUNDWATER LEVELS

Hydrograph of monthly maximums, minimums and means calculated from years 1964 to 1982

Therefore maximum number of years from which monthly maxs, mins and means may be calculated is 19

	Maximum	Minimum	Mean	No. of Years
Jan	22.58	7.85	14.77	18
Feb	23.29	7.97	16.47	18
Mar	23.69	6.14	17.34	18
Apr	22.97	5.61	17.23	19
May	22.00	4.80	16.42	19
Jun	21.28	4.11	15.23	19
Jul	19.69	3.42	13.97	19
Aug	17.08	3.29	12.98	19
Sep	18.84	3.37	12.28	19
Oct	17.98	3.82	11.85	19
Nov	22.06	7.03	12.20	19
Dec	21.51	7.81	13.09	19

Hydrograph(s) plotted for year ranges:- 1973 to 1977



Max, Min and Mean values calculated from years 1964 to 1982

OPTION 5 SITE DETAILS

BGS NUMBER	COMPUTER NUMBER	HA	AQ	NAME—LOCATION REC—PERIOD—MA AQUIFER	GRID REF.	DEPTH (M)	DATUM POINT	SURFACE LEVEL
NZ22/22	25624	25	17	RUSHYFORD NORTH EAST, GREAT CHILTON 1957-1985 NRA—N MAGNESIAN LIMESTONE	NZ 2875 2896	62.50	92.65	92.53
SE94/5	26352	26	6	DALTON ESTATE, DALTON HOLME 1889-1985 NRA—Y CHALK AND UPPER GREENSAND	SE 9651 4530	28.50	34.57	33.50
SE43/9	27360	27	17	PEGGY ELLERTON FARM, HAZELWOOD 1968-1985 NRA—Y MAGNESIAN LIMESTONE	SE 4535 3964	55.42	51.40	51.40
TF03/37	30229	30	13	NEW RED LION, ASLACKBY (CONTINUES OLD RED LION) 1964-1985 NRA—N LINCOLNSHIRE LIMESTONE	TF 0885 3034	50.00	33.45	33.82

SURFACE WATER QUALITY DATA

Background

A national archive of water quality data is maintained by Her Majesty's Inspectorate of Pollution (Department of the Environment) to provide information concerning the quality of rivers throughout the United Kingdom and to satisfy certain international obligations including the estimation of river-borne inputs of selected contaminants (e.g. nutrients) to the sea. Data for this archive are collected as part of the Harmonised Monitoring programme which provides for the sampling and analysis of water quality on a national basis.

The Harmonised Monitoring Scheme was established, for England and Wales, in 1974; a similar scheme was instituted for Scotland in July 1975. In Scotland responsibility for the collection and analysis of the samples rests with the seven River Purification Boards; data acquisition is co-ordinated by the Scottish Office Environment Department. In England and Wales responsibility passed, on the 1st September 1989, from the former regional Water Authorities to the newly-created National Rivers Authority.

Measuring authorities send analytical results of routinely collected samples of river water from approximately 220 monitoring stations; sampling frequencies vary substantially but are, typically, in the range 6 to 52 per year. Most of the monitoring stations are located on major rivers at, or near, the tidal limit.

The monitoring programme can embrace a large number - over 80 - of physical and chemical attributes of river water but typically only 25 are measured at any given site. A number of determinands are measured as standard but a larger proportion are monitored only where it is considered necessary to do so.

Currently no data for Northern Ireland are held on the Harmonised Monitoring Archive. Water quality data are, however, routinely collected and archived by the Environmental Protection Division of the Department of the Environment (NI); data for two Northern Ireland monitoring sites are included in this publication.

The measuring authorities maintain major programmes of chemical and biological sampling of rivers for their own purposes. From the 31st July 1985, the former Water Authorities were required, under the Control of Pollution Act, to maintain registers of the results of all samples of water and effluent taken for pollution control purposes together with details of all consented discharges. Following the enactment of the Water Bill 1989 this obligation passed to the National Rivers Authority. These registers are maintained at the regional headquarters of the NRA and are open for inspection by the public - free of charge. Persons wishing to consult the registers are advised to first contact the individual regional headquarters; a list of addresses is given on pages 190 to 191.

Data Retrieval

A range of retrieval options has been developed by Her Majesty's Inspectorate of Pollution to make available the water quality data held on the Harmonised Monitoring Archive and to provide statistical summaries based on those data. Requests for data, and guidance concerning its availability, should be addressed to:

Department of the Environment
HMIP, Room 504
Romney House
43 Marsham Street
London SW1P 3PY

Telephone: 071 276 8245

Data listings for monitoring sites in Northern Ireland may be obtained from the Environmental Protection Division of the DOE (NI) - see page 191.

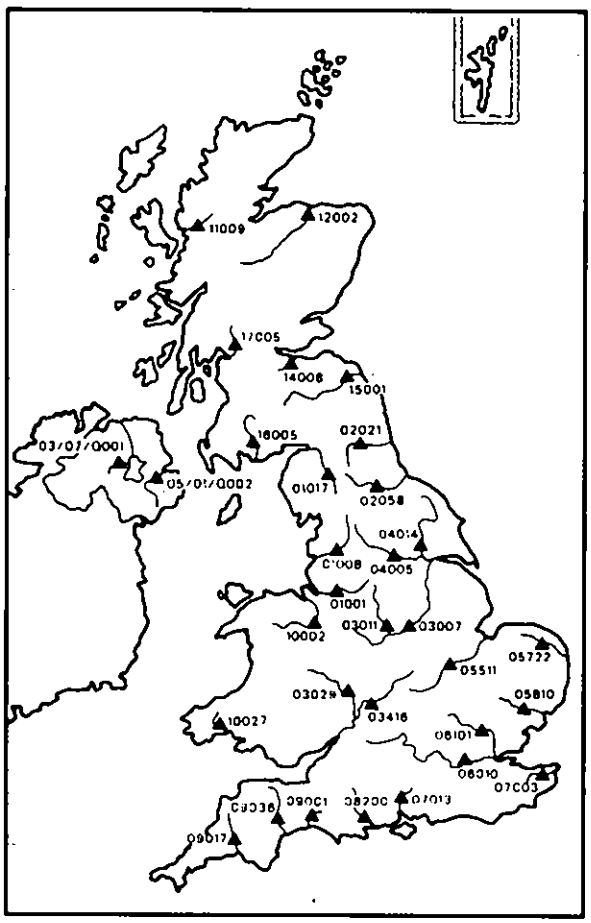


Figure 19. Water quality monitoring station location map.

Scope of the Water Quality Data Tabulations

River water quality data are presented for 32 monitoring sites on rivers throughout the United Kingdom. The location of each monitoring site is given on Figure 19 (previous page). For each site 1990, and period of record, data are given for a range of determinands; the determinands featured may differ between monitoring sites reflecting the character of the rivers themselves and differences in the sampling regimes between monitoring stations.

The following notes are provided to assist in the interpretation of particular data items.

Harmonised Monitoring Station Code

A reference number which serves as the primary identifier of the station. For stations on the Harmonised Monitoring Archive, the first two digits refer to the measuring authority, the remainder refer to individual sites within each measuring authority. For the Northern Ireland stations, the Department of the Environment (NI) reference code is given.

Measuring Authority

An abbreviation referencing the organisation responsible for the operation of the monitoring site. See pages 190 to 191 for a full list of the codes together with the corresponding authority names and addresses.

Grid Reference

The initial two-letter and two-figure codes each designate the relevant 100 kilometre National Grid square or Irish Grid square (see page 40); the standard six-figure map reference follows.

Associated Flow Measurement Station

For monitoring sites in Great Britain, the reference number, name, catchment area and grid reference of the gauging station which provides the discharge data stored on the Harmonised Monitoring Archive. At most sites the flow corresponding to the time the quality sample was taken is archived; at other locations the corresponding daily mean flow is utilised. Where the gauging station and water quality monitoring site are not coincident, some method of flow adjustment may have been employed to allow for the differing catchment areas.

For the Northern Ireland monitoring sites, reference details of the co-located gauging stations are given; the flow data for these stations are held on the Surface Water Archive at Wallingford.

1990 flow data for all but one of the relevant gauging stations may be found in the River Flow Data section. The shortness of the flow record for the Fleet Weir gauging station on the River Aire precludes its incorporation in the River Flow Data section; summary river flow data for 1990 are, however, included at the head of the water quality listing.

Determinands

Inadequate or unrepresentative sampling frequencies, or the presence of a substantial number of samples with concentrations recorded at, or below, the limit of detection, will normally result in the omission of a particular determinand.

Notes:

i. Conductivity results are standardised to 20°C.

ii. The biochemical oxygen demand data normally relate to the inhibited analytical results - BOD(atu).

iii. Nitrate concentrations are normally derived by subtracting the nitrite concentration from the reported Total Oxidised Nitrogen (TON) concentration; if the nitrite determination is below the limit of detection, nitrate is recorded as equivalent to TON.

Units

The standard units used to record and report each determinand. The number of significant figures given for each determinand corresponds to the way the data are stored on the Harmonised Monitoring or DOE (NI) Archives and reflects the uncertainty associated with the relevant analytical procedures.

1990 Data

Samples

The number of samples taken for each determinand during 1990. Where a proportion of analytical results were below the limit of detection, the number of samples in this category is given in parentheses. Normally determinands are not featured when the number of samples in the year is less than about nine. Exclusion may also result from a very uneven sampling pattern through the year.

Mean

The average* of all the sample values for each determinand in 1990. Where concentrations below the limit of detection are held on the Harmonised Monitoring Archive, the threshold value itself is used to compute the mean.

Maximum / Date

The maximum determinand value recorded during 1990 together with its date of occurrence. Where the maximum value recurs the date refers to the initial occurrence.

Minimum / Date

The minimum determinand value together with its date of occurrence. Where the minimum value recurs the date refers to the initial occurrence. A '<' symbol indicates a value below the limit of detection.

Different limits of detection may apply throughout the year at certain monitoring sites, for further details contact the address given on page 179.

Period of Record Data

For half of the featured sites, the pre-1990 summary statistics are presented for the sixteen-year period beginning in 1974; where individual stations were not incorporated into the Harmonised Monitoring network until after 1974, the appropriate first year of data is given. For certain stations the sampling frequency varies significantly from year to year and data for a few determinands may not extend over the full period of record; in particular the first year of data will normally be incomplete.

Where the pre-1990 data series includes values below the limit of detection, the threshold value has been used in the computation of the summary statistics.

For a number of the featured monitoring stations, a considerable amount of pre-1974 data, at least for certain determinands, may be stored on local, or regional, archives maintained by the measuring authorities. Also, for the period 1974–89, such archives may hold analytical results for substantially more samples than are represented on the Harmonised Monitoring Archive. Hence full equivalence between statistical summaries derived from national and regional databases cannot be expected for all monitoring sites.

Mean

The average* value of all the sample values for each determinand.

Percentiles

The 5, 50 and 95 percentile values for each determinand based on all the samples taken over the pre-1990 period.

Quarterly Averages

The mean quarterly average* for each of the three-monthly periods: January to March, April to June, July to September and October to December.

* In all cases this refers to the temporal mean rather than the flow-weighted average.

Mersey at Flixton — 1990

Harmonised monitoring station number 01 001
Measuring authority NRA-NW NGR 33 (SJ) 742 938

Flow measurement station : 069007 - Ashton Weir
C.A (km²) 660.0 NGR 33 (SJ) 772 936

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	51	10 9	21 0	18/07	4 0	18/12	10 9	4 0	10 0	19 5	5 7	12 5	16 5	8 8
pH	pH units	51	7 3	8 1	28/11	7 0	18/12	7 3	6 9	7 3	7 6	7 3	7 3	7 3	7 3
Conductivity	µS/cm	51	450	841	14/11	231	27/12	494	286	476	750	465	508	528	463
Suspended solids	mg/l	51	31 3	260 0	12/12	4 0	01/08	40 8	9 5	20 9	113 1	46 4	31 9	28 4	56 6
Dissolved oxygen	mg/l O	49	6 69	12 27	18/12	2 20	13/06	8 0	4 7	8 0	11 2	10 0	7 3	6 1	8 6
BOD (inhibited)	mg/l O	51	5 4	16 5	03/10	1 6	06/06	6 5	3 2	5 5	13 1	6 7	6 9	5 6	6 8
Ammoniacal nitrogen	mg/l N	50	1 283	2 880	26/02	0 060	24/10	2 06	0 40	1 80	4 40	2 07	2 46	1 91	1 70
Nitrite	mg/l N	48 (1)	0 298	0 780	15/08	<0 020	24/10	0 27	0 05	0 20	0 68	0 09	0 32	0 47	0 18
Nitrate	mg/l N	48 (1)	4 94	8 40	30/05	<0 05	24/10	3 9	2 0	3 7	6 6	2 9	4 2	5 0	3 6
Chloride	mg/l Cl	51	46 7	104 0	01/03	22 0	24/01	53 3	27 9	50 0	87 0	57 5	51 9	54 0	47 9
Total alkalinity	mg/l $CaCO_3$	51	81 4	111 0	15/08	41 0	27/12	94 2	55 0	94 5	135 0	86 5	100 8	99 2	88 8
Orthophosphate	mg/l P	45	1 432	2 900	25/07	0 080	24/10	1 16	0 20	1 01	2 65	0 67	1 31	1 67	0 94
Silica	mg/l SiO_2	47	7 71	10 08	24/10	3 84	09/05	7 94	5 30	8 10	10 20	7 79	6 91	8 76	8 44
Calcium	mg/l Ca	50	34 3	78 5	02/05	24 0	27/12	32 6	24 0	33 0	38 5	32 3	32 7	33 4	31 6
Magnesium	mg/l Mg	50	6 8	9 3	23/05	2 9	16/05	7 1	4 9	7 2	9 0	6 7	7 1	7 5	6 8

Ribble at Samlesbury — 1990

Harmonised monitoring station number 01 008
Measuring authority NRA NW NGR 34 (SD) 590 305

Flow measurement station 071001 - Samlesbury
C.A.(km²) 1145 0 NGR 34 (SD) 589 304

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	62	10 1	21 0	02/08	1 0	15/02	9 5	1 0	9 9	17 5	4 0	11 7	15 0	7 7
pH	pH units	59	8 0	9 8	01/10	7 4	15/01	7 7	7 0	7 7	8 6	7 5	7 9	7 9	7 6
Conductivity	µS/cm	60	393	654	01/10	200	15/01	419	235	410	640	414	455	436	365
Suspended solids	mg/l	60 (1)	26 2	357 0	05/07	<1 0	29/03	19 0	2 9	8 1	68 0	19 9	14 9	16 7	26 4
Dissolved oxygen	mg/l O	59	9 19	12 00	29/03	4 81	28/06	10 2	7 5	10 3	12 9	11 7	9 9	8 9	10 7
BOD (inhibited)	mg/l O	60	2 8	15 2	05/07	1 0	05/11	2 9	1 1	2 5	6 3	2 8	3 3	2 7	2 8
Ammoniacal nitrogen	mg/l N	60 (2)	0 196	0 600	01/10	<0 010	26/07	0 27	0 05	0 15	0 85	0 51	0 18	0 15	0 24
Nitrite	mg/l N	60	0 073	0 250	28/06	0 010	18/01	0 08	0 02	0 06	0 20	0 06	0 12	0 09	0 06
Nitrate	mg/l N	60	3 32	11 70	16/08	1 11	09/07	4 2	1 3	3 4	9 7	3 3	5 3	4 7	3 1
Chloride	mg/l Cl	59	30 4	55 0	27/10	13 0	15/01	33 3	14 1	30 0	57 9	38 3	36 1	32 9	26 1
Total alkalinity	mg/l $CaCO_3$	60	116 4	157 0	25/10	28 0	15/01	114 6	65 0	118 1	154 0	109 2	120 6	118 7	107 7
Orthophosphate	mg/l P	60 (1)	0 672	2 900	31/05	<0 010	15/01	0 44	0 10	0 30	1 16	0 24	0 54	0 57	0 29
Silica	mg/l SiO_2	60 (5)	2 85	5 86	06/12	<0 10	24/05	3 25	0 20	3 60	5 80	4 29	1 93	2 65	4 63
Calcium	mg/l Ca	60	47 4	60 8	06/12	26 5	15/01	50 7	34 0	51 7	64 0	50 9	52 5	51 3	49 8
Magnesium	mg/l Mg	60	4 8	7 1	02/08	1 6	28/06	5 2	2 7	5 1	7 7	4 9	5 7	5 3	4 7
Potassium	mg/l K	60	4 4	9 4	14/06	0 3	12/03	3 9	2 1	3 6	7 0	3 4	4 5	4 5	3 4
Sodium	mg/l Na	60	26 0	60 9	16/08	2 3	12/03	30 2	9 6	26 0	64 5	29 0	35 7	34 1	21 2

Eden at Temple Sowerby — 1990

Harmonised monitoring station number 01 017
Measuring authority NRA NW NGR 35 (NY) 604 281

Flow measurement station 076005 - Temple Sowerby
C.A.(km²) 616 4 NGR 35 (NY) 605 283

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	10 6	20 5	19/07	4 0	12/12	10 2	3 0	9 5	18 5	4 6	12 2	15 7	7 6
pH	pH units	12	8 2	8 8	16/08	7 8	12/12	8 0	7 4	8 0	8 7	7 9	8 2	8 2	8 0
Conductivity	µS/cm	12	326	432	13/06	230	12/12	365	225	380	480	333	366	385	348
Suspended solids	mg/l	12	9 4	35 0	16/05	2 0	19/07	7 8	1 0	4 0	24 0	7 9	7 5	5 0	9 8
Dissolved oxygen	mg/l O	12	11 01	13 30	18/04	9 05	20/09	11 3	8 8	11 2	13 8	12 3	11 6	10 6	11 0
BOD (inhibited)	mg/l O	12	1 8	5 7	16/05	0 6	18/10	1 8	0 8	1 7	3 3	1 8	1 9	2 0	1 6
Ammoniacal nitrogen	mg/l N	12	0 043	0 080	19/07	0 010	18/10	0 07	0 01	0 04	0 19	0 07	0 04	0 06	0 06
Nitrite	mg/l N	12	0 015	0 030	19/07	0 010	12/12	0 03	0 01	0 02	0 06	0 02	0 03	0 02	0 02
Nitrate	mg/l N	12	1 59	2 40	15/02	0 86	16/08	1 3	0 7	1 2	2 8	1 8	1 4	1 0	1 5
Chloride	mg/l Cl	12	16 1	25 0	13/06	11 0	11/01	19 4	10 0	18 0	29 0	19 5	20 4	21 9	15 9
Total alkalinity	mg/l $CaCO_3$	12	132 1	164 0	16/08	86 0	12/12	149 4	84 0	157 0	191 9	144 4	157 1	150 3	149 4
Orthophosphate	mg/l P	12 (1)	0 63	0 230	13/06	<0 010	12/12	0 15	0 02	0 11	0 41	0 09	0 19	0 21	0 10
Silica	mg/l SiO_2	12	2 28	3 14	13/06	0 60	18/04	2 41	0 39	2 50	4 20	3 13	1 39	2 18	3 06
Calcium	mg/l Ca	12	48 6	62 6	16/08	33 7	12/12	39 5	36 0	58 8	75 0	56 7	57 9	58 8	56 1
Magnesium	mg/l Mg	12	7 5	13 8	16/08	4 0	12/12	9 2	4 1	8 8	14 8	8 3	10 5	10 4	7 8
Potassium	mg/l K	12	2 3	4 6	13/06	0 3	16/05	2 9	1 6	2 5	4 9	2 2	3 0	3 6	2 4
Sodium	mg/l Na	12	8 6	12 9	13/06	2 8	11/01	10 1	5 2	9 0	16 5	9 5	10 8	11 7	7 9

South Tyne at Warden Bridge — 1990

Harmonised monitoring station number 02 021
Measuring authority NRA-N NGR 35 (NY) 910 660

Flow measurement station : 023004 - Haydon Bridge
C.A.(km²) : 751 1 NGR 35 (NY) 856 647

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1975 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	10 0	16 4	27/06	4 0	18/01	9 3	2 0	8 3	19 2	3 8	11 2	15 3	6 5
pH	pH units	12	7 7	8 5	09/04	6 7	20/02	7 9	7 3	7 8	8 5	7 7	8 0	8 0	7 7
Conductivity	µS/cm	12	197	379	14/08	81	20/02	257	130	247	410	262	267	280	205
Suspended solids	mg/l	12	13 3	98 0	20/02	1 0	09/04	10 6	1 1	4 1	21 8	8 7	12 7	11 4	10 2
Dissolved oxygen	mg/l O	9	11 96	14 30	15/11	9 90	09/07	11 3	9 0	11 3	13 7	12 3	10 9	10 0	11 5
BOD (inhibited)	mg/l O	12	1 5	2 1	09/07	0 7	15/11	1 7	0 6	1 5	3 4	1 5	1 9	1 9	1 6
Ammoniacal nitrogen	mg/l N	12 (6)	0 080	0 210	23/10	0 020	18/01	0 06	0 01	0 03	0 16	0 07	0 04	0 10	0 04
Nitrite	mg/l N	12 (6)	0 019	0 040	27/11	<0 010	20/02	0 01	0 01	0 01	0 02	0 01	0 02	0 01	0 01
Nitrate	mg/l N	12 (3)	0 47	1 50	18/01	0 05	09/07	0 6	0 1	0 5	1 4	1 0	0 6	0 3	0 6
Chloride	mg/l Cl	12	20 8	32 0	27/06	13 0	20/02	13 3	7 2	12 5	21 0	16 0	13 3	11 8	11 6

Tees at Broken Scar 1990

Harmonised monitoring station number : 02 058
Measuring authority : NRA-N NGR : 45 (NZ) 265 131

Flow measurement station : 025001 - Broken Scar
C.A.(km²) : 818.4 NGR 45 (NZ) 259 137

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	13	8 9	16 0	13/08	2 5	13/02	9.2	1 5	8 0	18 5	3 5	11 9	15 4	6 1
pH	pH units	13	7 8	8 2	12/06	7 3	09/05	7.7	6 9	7.7	8 2	7 6	7.7	7 6	7 5
Conductivity	µS/cm	13	180	290	11/12	110	09/07	195	114	185	286	226	205	169	176
Suspended solids	mg/l	13	9 2	23 0	09/07	2 0	10/04	12 2	1 0	6 0	49 0	15 5	7 8	11 8	17 9
Dissolved oxygen	mg/l O	13	11.15	12 60	13/02	9 20	09/07	10 9	8 2	11 0	13 3	12 5	10 4	9 3	11.5
BOD (inhibited)	mg/l O	13	2.1	7.6	09/07	1 0	05/11	1 8	0 8	1.7	3 2	1 9	1.9	1 8	1 7
Ammoniacal nitrogen	mg/l N	14 (9)	0 081	0 220	09/05	<0 050	09/01	0 12	0 01	0 06	0 32	0 12	0 10	0 09	0 14
Nitrite	mg/l N	14 (9)	0 016	0 040	09/07	<0 010	13/02	0 02	0 01	0 02	0 04	0 02	0 02	0 02	0 02
Nitrate	mg/l N	14 (4)	1.07	4.10	11/12	<0 10	13/08	1.3	0 3	1 0	3 0	1 8	1.3	0 6	1 4
Chloride	mg/l Cl	13 (1)	21 6	37 0	10/09	<5 0	30/10	14 4	6 0	14 0	24 0	18 7	14 2	11 3	15 0
Total alkalinity	mg/l $CaCO_3$	12 (1)	45 0	71 0	10/04	<10 0	30/10	62 3	34 0	60 0	94 9	62.7	70 3	59 5	59 2
Orthophosphate	mg/l P	12 (4)	0 052	0.160	09/05	<0 020	13/02	0 05	0 01	0 03	0 13	0 04	0 04	0 06	0 05

Trent at Nottingham 1990

Harmonised monitoring station number : 03 007
Measuring authority : NRA-ST NGR 43 (SK) 581 383

Flow measurement station 028009 - Colwick
C.A.(km²) : 7486.0 NGR : 43 (SK) 620 399

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	38	11 0	19 0	22/08	2 0	28/12	13 1	6 0	13 0	21 5	7 9	15 4	19 0	11 2
pH	pH units	38	7.9	8 6	17/07	7 4	21/05	7.7	7 3	7.8	8 2	7 7	7 8	7 9	7 7
Conductivity	µS/cm	38	896	1110	17/09	560	30/01	885	610	900	1130	804	900	956	876
Suspended solids	mg/l	38	16 8	102 0	01/03	5 0	25/11	25 7	7 1	17 0	76 0	28 8	22 8	20 7	29 5
Dissolved oxygen	mg/l O	35	10 81	13.10	01/03	8 00	22/08	9 8	7 7	9.8	11.7	10 7	9 5	8 8	9 8
BOD (inhibited)	mg/l O	37	3.7	6 5	11/04	1.5	17/10	3 5	1.7	3 4	6 1	3 2	4 0	3 8	3 3
Tot. diss. org. carbon*	mg/l O	34	7.3	8 6	22/06	5 8	17/03	8 4	4 4	6.3	18.9	7 2	8 5	9 1	8 4
Ammoniacal nitrogen	mg/l N	38 (1)	0 300	0.800	26/03	<0 040	17/09	0 38	0 01	0 30	1 00	0 64	0 30	0 22	0 37
Nitrate	mg/l N	38	9 25	11 50	20/12	7 30	23/10	8 5	6.1	8 6	11 1	8 4	8 6	8 3	8 6
Chloride	mg/l Cl	38	107 8	163 0	17/10	52 0	30/01	98 5	55 0	98 0	147 0	85 4	97 2	115 8	94 3
Total alkalinity	mg/l $CaCO_3$	37	155 7	194 0	20/12	110 0	30/01	160 1	120 0	164 0	188 0	157 6	165 3	161 9	154 8
Orthophosphate	mg/l P	34	2.159	3.400	17/09	0 520	13/02	1 50	0 51	1.48	2 70	0 97	1.59	2 00	1 47
Silica	mg/l SiO_2	21	6 53	9 90	17/01	1 75	26/04	7 02	2 60	7 50	11 10	8 43	4 44	6 55	7 92
Sulphate	mg/l SO_4	21	174.0	220 0	17/10	98 0	30/01	168 2	110 3	166 5	223 9	153 3	173 0	172 6	163 1
Calcium	mg/l Ca	21	97.5	115 0	11/04	75 0	30/01	97 0	73 9	100 0	113 1	95 4	110 0	89 7	93 1
Magnesium	mg/l Mg	21	22 3	30.5	24/09	13 7	30/01	21 3	13 9	21 5	28 0	21 2	22 0	20 7	19 4
Potassium	mg/l K	21	11 2	16 0	24/09	6.5	30/01	9 8	6 5	9 5	14 0	7.5	9 5	11 6	10 2
Sodium	mg/l Na	21	87 9	135 0	16/08	31 0	30/01	71 5	34 3	72 0	114 0	57 3	69 6	83 4	69 7

*Total dissolved organic carbon is converted to mg/l of oxygen when entered on the Harmonised Monitoring Archive

Derwent at Wilne 1990

Harmonised monitoring station number : 03 011
Measuring authority NRA-ST NGR : 43 (SK) 452 315

Flow measurement station : 028067 - Church Wilne
C.A.(km²) : 1177.5 NGR 43 (SK) 438 316

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	50	12 5	23 0	09/08	2 0	19/12	12 1	4 0	11.9	21 0	6 3	14 1	17 8	9 5
pH	pH units	52	7 9	8 7	11/04	7.5	23/10	7 8	7 4	7.8	8 2	7 8	7 9	7 9	7.7
Conductivity	µS/cm	52	664	830	15/08	390	29/01	661	440	653	940	551	668	772	647
Suspended solids	mg/l	52 (3)	11 1	107 0	11/12	<2 0	20/06	15 6	2 9	9 0	51 1	22 8	10 3	10 8	19 2
Dissolved oxygen	mg/l O	50	9.78	14 60	11/04	4 10	24/08	10 0	7 1	10 2	12 8	11 6	10 0	8 6	10 3
BOD (inhibited)	mg/l O	51	2.9	5.0	01/05	1 0	28/07	2.5	1 0	2 5	4 2	2 3	2 6	2 6	2 6
Tot. diss. org. carbon	mg/l O	50	5.1	8 5	28/06	2 7	21/02	4 9	2 2	4 2	10 4	3 9	4 9	5 8	5 2
Ammoniacal nitrogen	mg/l N	51	0 325	1 200	06/05	0 050	09/08	0 15	0 05	0 25	0 70	0 39	0 29	0 23	0 34
Nitrate	mg/l N	52	4 86	7 90	11/12	3 50	19/03	4 3	3 0	4 3	5 8	4 2	4 2	4 4	4 3
Chloride	mg/l Cl	52	68 9	99 0	17/10	33 0	29/01	67 3	33 8	63 5	111 9	54 6	65 7	84 6	64 0
Total alkalinity	mg/l $CaCO_3$	37	161 2	255 0	30/08	94 0	11/12	155.9	109 1	160 0	190 0	137 9	161 5	173.7	150 4
Orthophosphate	mg/l P	22	1 378	2 400	09/10	0 340	21/02	0 87	0 22	0 82	1 80	0 49	0 88	1 27	0 80
Silica	mg/l SiO_2	10	4 81	7 70	08/11	0 32	26/04	5.11	0 60	5 60	8 10	5 90	3 70	4 40	6 52
Sulphate	mg/l SO_4	10	108.5	148 0	20/08	59 0	23/05	103 3	60 0	98 1	170 0	78 5	109 8	125 6	96 0
Calcium	mg/l Ca	10	75 6	82 0	20/08	60 0	02/10	72 8	55 0	75 0	87 0	67 4	76 9	77.7	68 3
Magnesium	mg/l Mg	10	21 7	35 0	02/10	11.0	21/02	15 9	9 0	15 6	24 0	13 1	17 4	18 9	14 3
Potassium	mg/l K	10	5.9	8 2	20/06	4 0	21/02	5 2	3 0	5 0	7 0	4 6	5 1	6 0	5 0
Sodium	mg/l Na	10	61 5	77.0	18/07	35 0	21/02	48 0	22 0	45 0	77 9	34 3	51 5	64 8	43 2

Teme at Powick 1990

Harmonised monitoring station number : 03 029
Measuring authority : NRA-ST NGR : 32 (SO) 836 525

Flow measurement station : 054029 - Knightsford Br.
C.A.(km²) : 1480.0 NGR : 32 (SO) 735 557

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	11 3	21 0	25/07	5 0	27/12	10 4	2 5	10 0	19 5	5 1	12.7	16 4	7 7
pH	pH units	25	8 2	8.9	25/07	7.7	09/02	8 0	7 4	8 0	8 5	7 8	8 1	8 2	7 8
Conductivity	µS/cm	25	413	550	14/05	250	09/02	413	270	413	521	387	422	445	411
Suspended solids	mg/l	25	32 3	189.0	26/01	4 0	09/11	39 9	2 8	12.1	190 1	70 6	38 7	13 3	46 7
Dissolved oxygen	mg/l O	25	9 6	12.20	28/03	6 20	17/01	11 0	8 3	11 0	13 3	12 2	10 8	9 8	11.1
BOD (inhibited)	mg/l O	25 (2)	2 0	4.5	25/07	<1.0	09/02	1.9	0 7	1 6	4 3	1 7	2 2	1 9	1 8
Tot. diss. org. carbon	mg/l O	22	4 3	20 5	20/06	1 9	14/03	5 0	1.9	3 6	14 1	4 7	5 3	5 0	5.5
Ammoniacal nitrogen	mg/l N	24 (6)	0 089	0 210	27/12	0 040	14/03	0 08	0 01	0 05	0 23	0 10	0 08	0 07	0 07
Nitrate	mg/l N	25	4 68	7 40	27/12	1.80	25/07	4 2	2 2	4 1	6 3	5 2	4 4	3 3	4 2
Chloride	mg/l Cl	25	27 4	37 0	24/10	19 0	09/02	22 8	15 0	22 0	30 0	22 4	21 6	24 8	22 2
Total alkalinity	mg/l $CaCO_3$	24	145.7	226 0	20/09	64 0	27/12	139 0	78 6	140 1	190 0	118 8	149 1	165 7	125 1
Orthophosphate	mg/l P	23	0 234	0 460	24/10	0 090	14/03	0 18	0 03	0 14	0 40	0 12	0 14	0 23	0 27

Avon at Evesham Road Bridge — 1990

Harmonised monitoring station number 03 416
Measuring authority NRA-ST NGR 42 (SP) 034 431

Flow measurement station 054002 - Evesham
C.A.(km²) 2210.0 NGR 42 (SP) 040 438

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1977 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	45	12 2	21 0	08/08	5 0	01/03	11 2	3 0	11 0	20 0	5 1	13 1	17 0	8 7
pH	pH units	47	8 0	8 6	29/04	7 5	24/10	8 0	7 6	7 9	8 7	7 9	8 2	8 0	7 8
Conductivity	µS/cm	47	1037	1280	14/09	470	08/02	924	610	940	1160	832	896	1028	938
Suspended solids	mg/l	47	23 4	218 0	08/02	2 0	28/11	28 1	6 1	18 0	87 0	43 6	28 0	17 8	23 3
Dissolved oxygen	mg/l O	45	10 38	13 40	03/05	7 3	16/08	10 5	7 8	10 6	13 2	11 8	10 6	9 0	10 7
BOD (inhibited)	mg/l O	47 (1)	3 5	8 5	03/05	1 5	03/10	3 2	1 4	2 8	6 7	2 8	4 5	3 0	2 4
Tot diss org carbon	mg/l O	22	7 1	9 0	18/06	4 7	24/04	9 1	5 2	7 3	19 5	9 2	9 4	9 4	9 4
Ammoniacal nitrogen	mg/l N	47 (6)	0 191	0 540	08/02	0 040	19/03	0 26	0 01	0 20	0 76	0 50	0 16	0 13	0 28
Nitrate	mg/l N	46	11 43	20 00	09/04	8 10	24/10	10 4	7 4	10 2	13 5	11 0	9 6	9 8	11 0
Chloride	mg/l Cl	45	105 4	169 0	15/11	33 0	08/02	74 6	39 0	73 0	111 9	65 2	65 6	88 7	77 0
Total alkalinity	mg/l $CaCO_3$	27	193 7	220 0	30/03	118 0	24/10	197 5	150 0	200 0	231 0	193 8	202 0	197 9	196 1
Orthophosphate	mg/l P	29	2 987	4 600	14/09	0 720	16/02	1 72	0 49	1 50	3 60	1 04	1 44	2 41	1 97
Silica	mg/l SiO_2	18	12 21	17 00	15/11	4 00	24/04	10 38	3 70	10 90	15 40	9 72	6 90	11 14	12 92
Sulphate	mg/l SO_4	11	218 5	285 0	20/09	150 0	22/02	190 1	94 2	195 0	265 9	168 1	193 2	216 8	192 0
Calcium	mg/l Ca	11	120 0	134 0	15/11	88 0	24/10	120 5	87 0	125 0	140 0	119 1	117 2	123 7	122 5
Magnesium	mg/l Mg	10	28 3	38 5	16/05	20 5	24/10	27 5	15 2	27 0	39 0	24 5	28 5	30 3	28 0
Potassium	mg/l K	10	10 9	14 1	15/11	7 8	24/10	9 5	5 9	9 0	14 5	7 3	8 7	11 9	10 4
Sodium	mg/l Na	11	79 9	134 0	15/11	36 0	22/02	53 8	21 0	51 0	92 0	41 1	50 8	68 4	58 5

Aire at Fleet Weir — 1990

Harmonised monitoring station number 04 005
Measuring authority NRA-Y NGR 44 (SE) 381 285

Flow measurement station 027080 - Fleet Weir
C.A.(km²) 865.0 NGR 44 (SE) 381 295

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Flow	m^3s^{-1}	365	16 31	110 5	25/01	4 1	13/08								
Temperature	°C	44	13 7	24 7	02/08	5 4	10/12	12 5	5 0	12 0	21 0	7 1	14 4	17 7	10 4
pH	pH units	49	7 5	7 9	18/04	7 1	23/10	7 5	7 2	7 5	7 8	7 6	7 5	7 4	7 5
Conductivity	µS/cm	49	766	1196	18/09	378	26/01	681	389	652	1095	662	687	770	623
Suspended solids	mg/l	49	24 4	180 0	04/07	6 0	02/08	28 4	7 6	16 6	81 1	31 4	26 6	23 8	32 0
Dissolved oxygen	mg/l O	44	8 04	14 80	26/01	1 30	27/07	7 6	2 4	7 8	11 5	10 2	6 6	5 2	8 4
BOD (inhibited)	mg/l O	50	7 3	30 0	04/07	2 3	15/01	8 3	3 9	7 3	14 2	8 0	8 5	8 6	7 8
Ammoniacal nitrogen	mg/l N	49	1 371	4 780	27/07	0 430	01/02	2 17	0 41	1 75	5 30	2 13	2 38	2 66	1 94
Nitrite	mg/l N	49 (3)	0 239	1 120	04/07	0 010	28/11	0 36	0 07	0 28	0 89	0 16	0 43	0 57	0 26
Nitrate	mg/l N	49	5 50	11 87	30/05	2 02	16/07	4 9	2 5	4 7	8 1	4 2	5 2	5 8	4 6
Chloride	mg/l Cl	49	83 5	160 0	21/06	35 8	30/10	80 9	34 3	74 0	155 0	83 3	83 2	91 4	70 7
Total alkalinity	mg/l $CaCO_3$	48	122 5	167 0	21/06	53 0	13/02	122 7	78 0	124 0	165 0	114 1	122 3	133 2	117 1
Orthophosphate	mg/l P	49	1 350	2 940	15/06	0 040	26/01	1 45	0 17	1 17	3 58	0 89	1 50	2 01	1 07
Calcium	mg/l Ca	43	56 0	73 0	14/08	37 0	20/03	60 5	45 7	60 9	74 9	60 3	61 1	61 0	61 3
Magnesium	mg/l Mg	43	10 5	33 4	10/07	2 1	26/01	13 0	5 6	12 6	20 6	12 8	13 7	14 9	11 6

Derwent at Loftsome Bridge — 1990

Harmonised monitoring station number 04 014
Measuring authority NRA-Y NGR 44 (SE) 707 302

Flow measurement station 027041 - Buttercrambe
C.A.(km²) 1586 0 NGR 44 (SE) 731 587

Determinand	Units	1990 Samples	Mean	Max	Date	Min	Date	Period of record 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	17	11 1	20 5	02/08	4 0	28/12	10 7	3 0	10 0	19 5	5 0	12 8	16 7	8 0
pH	pH units	18	7 9	8 6	24/05	7 3	28/12	7 9	7 5	7 9	8 3	7 8	8 0	7 9	7 8
Conductivity	µS/cm	18	569	666	14/09	320	25/06	516	366	526	617	518	513	524	518
Suspended solids	mg/l	18	12 8	48 0	05/11	2 0	02/08	24 3	3 5	12 7	84 9	36 4	19 6	11 2	30 9
Dissolved oxygen	mg/l O	16	10 14	12 40	12/02	7 61	24/10	10 6	8 7	10 7	12 6	11 8	10 7	9 4	10 5
BOD (inhibited)	mg/l O	17 (2)	2 1	5 9	24/05	0 4	12/02	1 8	0 7	1 5	3 0	1 8	1 9	1 4	1 5
Ammoniacal nitrogen	mg/l N	18 (8)	0 108	0 340	24/05	0 050	11/04	0 11	0 01	0 09	0 25	0 14	0 09	0 08	0 11
Nitrite	mg/l N	18 (14)	0 020	0 180	02/08	0 010	11/02	0 04	0 02	0 04	0 08	0 04	0 05	0 05	0 05
Nitrate	mg/l N	18 (1)	3 27	7 73	28/12	0 20	14/05	4 3	2 5	4 1	6 9	5 4	4 6	3 3	4 1
Chloride	mg/l Cl	18	33 9	48 0	12/02	16 9	25/06	30 5	22 5	30 0	40 0	34 2	30 0	29 9	31 3
Total alkalinity	mg/l $CaCO_3$	17	131 3	186 0	14/09	74 0	25/06	148 2	105 9	153 0	173 0	146 7	153 7	150 1	144 2
Orthophosphate	mg/l P	18 (4)	0 077	0 230	05/11	0 030	24/05	0 10	0 01	0 09	0 24	0 07	0 08	0 13	0 11
Silica	mg/l SiO_2	15	4 80	8 50	03/12	1 10	14/05	6 46	3 50	6 66	9 40	7 55	5 27	6 34	7 13
Sulphate	mg/l SO_4	16	76 7	124 0	20/08	10 0	12/02	78 6	47 1	80 0	97 5	79 7	75 8	80 3	79 1
Calcium	mg/l Ca	15	80 4	106 0	28/12	43 7	25/06	92 5	66 1	91 7	106 9	100 9	91 0	86 7	90 2
Magnesium	mg/l Mg	14	11 3	37 4	02/08	0 7	11/04	10 1	4 6	8 8	19 1	12 2	9 7	8 1	9 6

Nene at Wansford — 1990

Harmonised monitoring station number 05 511
Measuring authority NRA-A NGR 52 (TL) 082 996

Flow measurement station 032001 - Orton
C.A.(km²) 1634.3 NGR 52 (TL) 166 972

Determinand	Units	1990 Samples	Mean	Max	Date	Min.	Date	Period of record 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	48	11 7	21 6	25/07	2 3	04/12	11 5	3 0	11 5	21 0	5 4	13 9	17 8	8 2
pH	pH units	48	8 1	8 9	04/06	7 6	08/08	8 1	7 7	8 0	8 8	7 9	8 3	8 2	7 9
Conductivity	µS/cm	45	1041	1261	13/12	720	05/02	934	719	926	1200	907	919	971	943
Suspended solids	mg/l	24	13 9	78 5	05/02	4 0	24/09	21 4	4 0	13 5	63 8	29 4	22 9	14 3	19 3
Dissolved oxygen	mg/l O	48	9 78	14 10	28/03	6 10	18/07	10 6	8 0	10 6	13 1	11 9	10 8	9 2	10 9
BOD (inhibited)	mg/l O	47 (1)	3 3	10 0	28/03	0 6	30/08	3 6	1 3	3 0	8 8	3 2	5 9	3 3	2 5
Ammoniacal nitrogen	mg/l N	47 (4)	0 135	0 404	08/01	0 040	19/03	0 35	0 05	0 19	1 10	0 69	0 18	0 11	0 54
Nitrite	mg/l N	20	0 093	0 182	19/11	0 034	15/08	0 11	0 03	0 10	0 20	0 09	0 12	0 08	0 13
Nitrate	mg/l N	46	8 59	14 72	02/01	3 52	20/08	9 7	5 5	9 2	15 3	11 9	9 2	6 9	10 2
Chloride	mg/l Cl	46	86 3	115 0	13/12	41 8	28/02	73 4	42 0	72 0	109 0	64 7	68 2	83 2	75 9
Total alkalinity	mg/l $CaCO_3$	23	203 9	230 0	02/07	170 0	05/02	208 3	169 9	210 0	235 1	206 9	207 8	209 6	206 5
Silica	mg/l SiO_2	22	5 76	9 35	02/07	0 34	14/05	5 75	0 15	6 07	9 49	6 96	3 31	4 54	8 05
Calcium	mg/l Ca	10	135 7	153 0	04/06	113 9	19/11	134 5	86 9	140 7	155 1	128 6	140 6	129 6	130 9
Magnesium	mg/l Mg	9	11 7	14 3	22/10	7 5	05/02	11 1	8 1	11 3	13 0	10 6	10 9	11 9	10 6
Sulphate	mg/l SO_4	19	188 6	239 0	15/08	142 0	05/02	167 7	105 1	168 9	229 0	155 7	162 8	192 8	178 1
Potassium	mg/l K	11	11 4	15 7	19/11	5 2	05/07	10 7	5 3	9 7	19 8	7 8	10 4	12 8	11 1
Sodium	mg/l Na	11	68 1	95 3	24/09	24 7	05/02	53 8	22 2	49 0	94 5	41 9	49 2	63 6	58 2

Bure at Horstead Mill 1990

Harmonised monitoring station number : 05 722
Measuring authority : NRA-A NGR 63 (TG) 267 198
Flow measurement station : 034003 - Ingworth
C.A.(km²) : 164.7 NGR 63 (TG) 192 296

Determinand	Units	1990 Samples	Mean	Max	Date	Min	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	47	12 1	20 1	06/08	4 5	20/12	10.9	3 4	10 0	19 5	5.7	12.5	16 8	8 3
pH	pH units	47	8 0	8 3	18/06	7 4	13/08	7 8	7 3	7 8	8 2	7 7	7 8	7 9	7.7
Conductivity	µS/cm	45	773	925	26/11	656	10/09	732	610	735	829	744	706	726	748
Suspended solids	mg/l	25 (5)	5 1	18 0	11/06	0 4	16/07	7 8	1 2	5 0	21 0	24 5	6.1	4 0	5 9
BOD (inhibited)	mg/l O	46 (6)	1 6	3 1	02/04	0 9	15/01	1.7	0 8	1 6	3 1	1 8	2 2	1 7	1 3
Ammoniacal nitrogen	mg/l N	45 (12)	0 097	0 347	11/06	0 040	19/03	0 14	0 01	0 09	0 50	0 24	0 10	0 09	0 14
Nitrite	mg/l N	21	0 057	0 118	06/08	0 024	10/09	0 07	0 01	0 06	0 20	0 07	0 06	0 08	0 08
Nitrate	mg/l N	48	5 30	10 10	05/02	2 95	06/08	5 9	3 5	5 7	8 9	7 6	5 8	4.6	5 8
Chloride	mg/l Cl	48	61 1	80 8	15/01	42 9	09/07	58 2	46 0	56 0	76 5	60 5	55 3	56 3	60 4
Total alkalinity	mg/l $CaCO_3$	24	206 3	240 0	10/12	190 0	19/11	219.5	178 0	218 0	256 9	221 9	208 0	218 4	239 6
Silica	mg/l SiO_2	23	7 54	12 90	10/12	2 78	23/04	7 90	3 14	8 25	12 00	8 76	4 90	6 69	10 14
Sulphate	mg/l SO_4	19	97 6	149 6	19/11	64 4	08/10	83 7	56 1	79 2	111 2	83 7	82 8	84 1	85 9
Calcium	mg/l Ca	11	125 5	139 0	29/11	64 4	08/10	117.8	95 0	117 0	142 9	119 3	117 0	114 5	121.1
Magnesium	mg/l Mg	11	8 0	9 2	22/10	6 9	23/04	7 4	4 9	7 5	9 4	7 6	7 7	7 1	7 2
Potassium	mg/l K	12	4 0	5 5	19/11	3 2	23/07	4.1	2 5	4 0	5 6	4 2	3 7	4 0	4.5
Sodium	mg/l Na	12	27 0	30 8	23/04	19 9	26/03	29 8	20 0	27 6	47 0	30 0	29 4	29 5	29 8

Stour at Langham 1990

Harmonised monitoring station number : 05 810
Measuring authority : NRA-A NGR 62 (TM) 026 345
Flow measurement station : 036006 - Langham
C.A.(km²) : 578.0 NGR : 62 (TM) 020 344

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	44	12 8	22 0	08/05	4 0	13/12	11.1	2.5	11 0	20 0	4 9	13 5	17 0	8 2
pH	pH units	45	8 2	9 0	31/05	7 6	11/06	8 2	7 8	8 2	8 9	8.1	8 4	8 3	8 1
Conductivity	µS/cm	42	925	1379	26/07	725	31/05	905	730	910	1100	922	879	877	945
Suspended solids	mg/l	25 (1)	12 0	40 0	07/06	3 5	03/12	16 4	3 0	9 9	49 0	18 2	19 1	10 9	16 7
Dissolved oxygen	mg/l O	42	10 05	14 80	15/03	6 60	16/07	10 9	7 6	10 9	14 0	12 3	11.5	9 4	10 5
BOD (inhibited)	mg/l O	45 (2)	3 5	10 2	07/06	0 8	03/12	3.1	1 0	2 3	9 4	2 3	5 3	2 5	2 2
Tot. diss. org. carbon	mg/l O	22	6 4	15 5	11/06	3 5	06/09	6 8	4 4	6 3	10 4	5 5	7 6	7 0	6 0
Ammoniacal nitrogen	mg/l N	44 (9)	0 082	0 308	11/06	0 040	15/01	0 12	0 02	0 08	0 38	0 20	0 09	0 07	0 14
Nitrite	mg/l N	26	0 050	0 130	04/01	0 018	05/07	0 07	0 02	0 06	0 16	0 07	0 09	0 04	0 08
Nitrate	mg/l N	45	5 84	17 14	08/02	1.77	26/07	8 2	2 1	7 4	16 0	12 2	7 9	4 4	8 7
Chloride	mg/l Cl	45	90 4	231 4	26/07	54 0	22/02	66 5	39 0	64 4	97 9	55 2	61 2	72 8	74 2
Total alkalinity	mg/l $CaCO_3$	25	253 4	300 0	06/09	194 0	19/04	243.8	195 0	250 0	280 0	244.5	244 1	248 8	250 5
Silica	mg/l SiO_2	25 (1)	7 14	14 20	03/12	0 08	19/04	7 62	0 22	7 99	13 00	7 57	4 19	8 32	10 38
Sulphate	mg/l SO_4	24	95 7	121 0	22/01	73 8	26/07	100 0	70 0	97 1	138 1	112 1	112 1	96 5	104 5
Calcium	mg/l Ca	11	127 8	143 0	04/01	112 0	08/05	134.2	94.9	138 0	166 1	147.7	134 5	119 8	139.5
Magnesium	mg/l Mg	11	9 3	14 7	28/08	5 3	03/12	9 8	5 3	8 4	20 0	7 7	8 8	9 6	8.9
Potassium	mg/l K	10	7 6	13 2	19/11	0 6	16/07	7 4	3 5	7 3	12 0	5 8	7 0	7 9	9.3
Sodium	mg/l Na	10	48 9	80 4	16/07	30 4	23/04	42 8	20 0	41 0	70 0	32 7	40 0	49 9	49.9

Thames at Teddington Weir 1990

Harmonised monitoring station number : 06 010
Measuring authority : NRA-T NGR : 51 (TQ) 171 714
Flow measurement station : 039001 - Kingston
C.A (km²) 9948.0 NGR : 51 (TQ) 177 698

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	17	11 9	21 0	09/08	7 0	12/12	12 2	4 0	12 0	21 0	5 9	14 0	18.2	9 9
pH	pH units	17	7 6	8 4	03/04	6 9	09/11	8 0	7.5	8 0	8 7	7 9	8 3	8 0	7.8
Conductivity	ms/cm	14	690	997	06/11	461	06/02	586	485	580	712	605	582	621	604
Suspended solids	mg/l	17	12 8	40 5	06/02	3 0	09/11	21 1	4 5	13 3	70 0	28 1	22 0	13 1	23 7
Dissolved oxygen	mg/l O	15	9 21	11 47	03/04	6 80	22/11	10 0	6 7	10 0	13.1	11 3	10 6	8 6	9 8
BOD (inhibited)	mg/l O	17 (3)	2 9	8 2	09/11	1 4	08/03	2.9	1.1	2 3	6 6	2 2	4 3	2.9	2 2
Ammoniacal nitrogen	mg/l N	17 (5)	0 449	2.100	17/10	0 050	02/11	0 33	0 01	0 23	1 00	0 34	0 21	0 38	0 40
Nitrite	mg/l N	12 (4)	0 106	0 353	09/05	0 005	02/11	0 12	0 06	0 10	0 22	0 11	0 09	0 11	0 16
Nitrate	mg/l N	17 (1)	7 67	10 80	15/11	0 20	11/10	7.3	5 4	7 1	10 0	8 1	6 8	7 7	7 3
Chloride	mg/l Cl	17	60 1	89 0	02/11	32 0	06/02	42 9	30 0	41 0	62 0	40 4	39 1	45 8	43 8
Total alkalinity	mg/l $CaCO_3$	16	168 7	313 0	03/04	99 0	02/11	186 5	148.1	190 1	213 9	187 0	195 3	189 4	179 9
Orthophosphate	mg/l P	17	2 639	4 440	11/10	0 240	06/02	1.48	0 40	1 19	3 59	0 85	1.13	2 08	1.58
Sulphate	mg/l SO_4	14	68 9	87 0	30/11	59 0	02/11	61 3	47 0	62 0	75 0	62 4	61.1	63 0	68 6
Calcium	mg/l Ca	14	93 1	176 0	03/04	70 0	02/11	98 8	79 0	100 0	115 0	104 3	100 4	95 3	95 4
Potassium	mg/l K	12	8 4	10 9	30/11	4 4	03/04	6 8	4 3	6 4	10 4	6 3	6 0	7 8	7.2
Sodium	mg/l Na	14	41 3	64 3	09/08	15 9	09/11	31 8	19 8	29 6	49 5	27 0	28 5	38 6	34 4

Lee at Waterhall 1990

Harmonised monitoring station number 06 101
Measuring authority NRA-T NGR : 52 (TL) 299 099
Flow measurement station : 038018 - Water Hall
C.A.(km²) : 150.0 NGR : 52 (TL) 299 099

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	12 5	23 0	18/07	5 0	06/12	12 0	4 5	12 0	20 0	6 9	13 6	16 8	9 3
pH	pH units	24	8 0	8 9	28/06	7 5	21/11	8 0	7 6	8 0	8 4	8 0	8 1	8 1	7 8
Conductivity	µS/cm	13	993	1880	07/11	563	31/01	807	624	791	1057	878	777	764	822
Suspended solids	mg/l	12	10 8	45 0	31/01	2 0	03/01	15 7	3 0	10 6	46 5	15 5	13 6	17 4	14 4
Dissolved oxygen	mg/l O	25	9 46	11.76	02/03	6 00	18/07	10 4	8 0	10 4	13 3	11 5	10 6	9 5	10 3
BOD (inhibited)	mg/l O	25 (1)	2 4	3 9	07/11	0 9	31/07	2.7	1 3	2 4	4 4	2 7	3 1	2 2	2.5
Tot. diss. org. carbon	mg/l O	11	21 9	87 2	07/11	11 2	02/03	13.7	3 0	9 4	47 7	15 2	17 8	8 4	17.3
Ammoniacal nitrogen	mg/l N	24 (10)	0 237	2 980	26/10	0 050	15/03	0.24	0 05	0 11	0 81	0 37	0 10	0 09	0 38
Nitrite	mg/l N	13 (1)	0 108	0 305	06/12	0 005	07/11	0 14	0 05	0 11	0 29	0 11	0 12	0 32	0 19
Nitrate	mg/l N	25	10 56	18 60	21/11	4.20	30/08	11 6	7.7	11.4	16 2	12.8	12.1	12.1	13.7
Chloride	mg/l Cl	25	98 1	203 0	06/12	42 0	12/04	70 8	46 0	68 0	108 0	86 6	66 0	76 1	76 6
Total alkalinity	mg/l $CaCO_3$	12	221 3	266 0	07/11	153 0	31/01	209 7	129 1	222.1	252 1	203 6	216 2	209 7	202 0
Orthophosphate	mg/l P	21	4 002	5 130	18/07	1 670	31/01	2 37	1.12	2 36	3 78	2 18	2 31	2 56	2 60
Sulphate	mg/l SO_4	12	98 4	184 0	07/11	70 0	31/01	79 4	54 0	78 0	108 0	77.7	79 5	75 5	83 2
Calcium	mg/l Ca	13	118 9	132 0	14/10	79 0	31/01	117 6	93 1	117 9	142 0	119 3	119 3	114.3	115 2
Magnesium	mg/l Mg	13	5 5	20 3	13/09	3 6	27/03	4 0	3 1	3 9	4 9	4 2	3 9	3 8	3 9
Potassium	mg/l K	13	10 8	15 8	14/10	6 6	02/03	8 6	5 6	8 1	14 2	7 9	7.4	8 8	10 1
Sodium	mg/l Na	13	82 7	125 0	18/07	38 0	31/01	65 0	35 6	62 0	110 0	64 7	63 8	65 3	62 1

Great Stour at Bretts Bailey Bridge — 1990

Harmonised monitoring station number : 07 003
Measuring authority : NRA-S NGR : 61 (TR) 187 603

Flow measurement station 040011 - Horton
C.A.(km²) : 345.0 NGR : 61 (TR) 116 554

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	26	12 0	19 0	23/07	5 0	13/12	11 8	4 2	12 0	18 4	7 1	13 4	16 7	10 0
pH	pH units	24	8 1	8 4	20/06	7 8	01/02	7 8	7 4	7 8	8 3	7.7	7 9	7 9	7 7
Suspended solids	mg/l	34	30 1	405 0	28/03	1 5	10/09	12 1	1 9	6 6	43 0	19.9	7 4	6 5	15 4
BOD (inhibited)	mg/l O	20	2 2	3 2	12/09	1 4	14/11	2 7	1 1	2 5	5 2	3 0	2 9	2 2	2.4
Ammoniacal nitrogen	mg/l N	29(2)	0 143	0 750	07/03	0 010	12/09	0 33	0 02	0 15	1 30	0 52	0 34	0 12	0 39
Nitrite	mg/l N	33	0 081	0 180	07/03	0 030	10/04	0 11	0 03	0 08	0 30	0 10	0 12	0 12	0 13
Nitrate	mg/l N	33	7 65	12.40	29/11	3 80	23/07	5 8	3 9	5 6	8 5	6 7	5 4	4 8	6 3
Chloride	mg/l Cl	24	74 9	97 0	14/11	53 0	23/07	50 2	36 0	48 0	72 0	53 2	48 0	49 1	54 4
Orthophosphate	mg/l P	33	1 676	2 900	17/10	0 410	01/02	0 95	0 32	0 89	1 70	0 69	0 95	1.21	1 08
Silica	mg/l SiO_2	24	8 35	11.00	14/11	3 60	10/04	7 50	2 50	7 87	11 10	8 15	5 06	7 00	10 01
Total alkalinity	mg/l $CaCO_3$	24	220 6	290 0	16/08	94 0	01/02	214 1	156 0	224 0	243 9	199 5	220 4	222.6	211 1

Itchen at Gatersmill — 1990

Harmonised monitoring station number 07 013
Measuring authority : NRA-S NGR 41 (SU) 434 156

Flow measurement station : 042010 - Highbridge
C.A.(km²) : 360.0 NGR 41 (SU) 467 213

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1980 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	33	12 4	19 0	06/08	6 0	18/12	11 2	5 0	11 0	18 0	7 5	12 9	16 0	10 0
pH	pH units	34	8 1	8 4	10/09	7 8	22/10	8 1	7 7	8 1	8 4	8 1	8 1	8 2	8 0
Suspended solids	mg/l	42(1)	10 9	47 0	06/02	1 0	05/09	11 5	2 4	7 4	30 7	28 1	9 6	4 9	10 8
BOD (inhibited)	mg/l O	30(2)	1 4	4 4	21/05	0 5	20/08	2 0	1 0	1 9	3 5	2 2	2 3	1 5	1 9
Tot. diss. org. carbon	mg/l O	31	8 5	29 6	12/10	2 7	24/01	7 2	4 0	6 5	13 9	6 8	6 8	6 9	7 6
Ammoniacal nitrogen	mg/l N	41(5)	0 094	0 370	29/08	0 010	12/07	0 11	0 01	0 09	0 28	0 16	0 07	0 06	0 12
Nitrite	mg/l N	43(1)	0 068	0 210	22/10	0 010	12/07	0 05	0 03	0 05	0 10	0 04	0 05	0 06	0 07
Nitrate	mg/l N	43	5 24	6 60	21/02	3 30	01/08	5 1	3 9	5 2	6 1	5 4	5 1	4 6	5 0
Chloride	mg/l Cl	34	21 7	28 1	06/02	17 0	05/09	21 4	17 8	21 0	26 4	21 7	20 7	20 9	22 3
Orthophosphate	mg/l P	40(1)	0 408	1 010	03/10	0 010	05/09	0 41	0 15	0 39	0 76	0 36	0 35	0 45	0 49
Silica	mg/l SiO_2	24	9 25	12 50	19/11	3 90	25/04	10 32	5 42	10 79	12 50	10 41	7 71	11.11	11 70
Total alkalinity	mg/l $CaCO_3$	17	244 4	276 0	13/08	228 0	16/07	229 3	195 0	231 5	260 0	239 2	230 9	232 8	229 8

Stour at Hurn Court School — 1990

Harmonised monitoring station number 08 200
Measuring authority NRA-W NGR : 40 (SZ) 122 955

Flow measurement station : 043007 : Throop Mill
C.A (km²) 1073.0 NGR 40 (SZ) 113 958

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	24	11.6	18 0	30/08	4 0	11/12	11 2	4 0	10 7	19 0	6 6	12 7	17 0	8 4
pH	pH units	24	7 9	8 9	21/05	7 5	11/12	7 9	7 4	7 9	8 5	7 8	8 1	8 0	7 8
Suspended solids	mg/l	24	15 1	90 0	29/01	4 0	25/10	15 4	3 0	8 0	54 0	18 2	9 8	9 9	22 2
Dissolved oxygen	mg/l O	23	10 82	14 00	12/03	8 40	30/08	10 4	8 0	10 1	13 2	10 4	11 3	9 4	10 7
BOD (inhibited)	mg/l O	22	4 1	16 0	30/05	1 3	12/03	2 7	1 1	2 2	6 0	2 3	3 7	2 0	2 8
Ammoniacal nitrogen	mg/l N	17	0 105	0 400	11/12	0 040	17/09	0 18	0 02	0 15	0 40	0 23	0 17	0 10	0 21
Nitrite	mg/l N	23	0 073	0 150	23/07	0 030	03/09	0 09	0 03	0 08	0 19	0 06	0 11	0 11	0 10
Nitrate	mg/l N	24	6 84	10 73	02/01	3 05	23/07	5 5	2 7	5 4	8 1	6 2	5 2	4 3	6 1
Chloride	mg/l Cl	24	33.9	49 0	11/12	25 0	12/03	28 0	20 0	27 0	38 0	25 2	25 5	28 1	29 1
Orthophosphate	mg/l P	22	0 582	1 290	17/09	0 090	19/02	0 44	0 10	0 35	0 96	0 26	0 30	0 66	0 50
Magnesium	mg/l Mg	10	3 5	4 4	29/11	3 1	23/07	4 0	2 7	3 8	6 0	4 1	4 1	3 5	4 5
Potassium	mg/l K	9	6 2	10 2	29/11	4 4	23/07	5 2	2 9	5 0	8 9	4 8	4 3	5 1	7 0

Axe at Whitford Road Bridge — 1990

Harmonised monitoring station number 09 001
Measuring authority NRA-SW NGR : 30 (SY) 262 953

Flow measurement station : 045004 - Whitford
C.A.(km²) 288.5 NGR : 30 (SY) 262 953

Determinand	Units	1990 Samples	Mean	Max	Date	Min.	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	26	11 9	19 0	30/07	5 0	06/11	10 9	3 9	10 5	18 5	5 7	12 3	16 0	8 8
pH	pH units	26	8 1	8.7	19/04	7 7	23/01	8 0	7 4	7 9	8 5	7 8	8 1	8 0	7 8
Conductivity	µS/cm	26	411	471	30/07	328	03/01	386	302	390	450	371	389	411	372
Suspended solids	mg/l	26	12 3	86 0	26/10	2 0	22/08	13 1	2 1	5 9	14 9	17 1	9.9	5 9	23 7
Dissolved oxygen	mg/l O	26	10 35	14 50	19/04	7 80	03/10	10 9	8 4	10 9	13 5	12 0	11 3	9 9	10 7
BOD (inhibited)	mg/l O	26	2 0	5 8	26/10	0 8	22/08	2 1	0 8	1 7	4 4	2 1	2 3	1 7	2 2
Tot diss org carbon	mg/l O	26	4 3	8 5	13/11	2 4	17/09	13 5	7 5	11 5	25 9	11 9	13 0	11 9	16 4
Ammoniacal nitrogen	mg/l N	26(1)	0 059	0 200	03/01	0 010	17/09	0 10	0 01	0 06	0 32	0 17	0 08	0 06	0 12
Nitrite	mg/l N	26(1)	0 043	0 080	13/11	0 005	28/08	0 05	0 02	0 04	0 10	0 04	0 05	0 03	0 05
Nitrate	mg/l N	26	4 37	7 20	23/01	3 10	28/08	3 7	2 1	3 4	5 7	4 2	3 3	3 1	4 6
Chloride	mg/l Cl	26	28.4	38 2	06/12	22 5	17/09	23 4	19 0	22 5	29 6	24 0	21.2	23 1	24 2
Total alkalinity	mg/l $CaCO_3$	26	143 3	172 0	14/06	84 0	23/01	135 9	88 0	140 0	167 0	120 3	143 0	152 9	126.3
Orthophosphate	mg/l P	26	0 422	1 230	30/07	0 160	03/01	0 25	0 12	0 23	0 44	0 20	0 25	0 31	0 23
Silica	mg/l SiO_2	26	10 09	13 60	03/10	0 60	19/04	9 41	4 40	9 80	12 70	9 18	7 41	10 13	10 81
Sulphate	mg/l SO_4	26	35 5	59 2	06/12	27 2	03/01	33 5	22 3	34 2	41 1	32 0	32.1	35 1	33 8
Calcium	mg/l Ca	26	67 7	80 0	28/08	45 2	23/01	62 7	44 0	63 0	76 0	57 2	63 3	69 5	58 8
Magnesium	mg/l Mg	26	5 8	7 1	13/11	4 8	26/10	6 1	4 6	6 0	7 3	6 1	6 0	6 1	6 1
Potassium	mg/l K	26	3 8	6 2	13/11	2 2	14/05	4 2	3 0	3 9	6 6	4 2	3 8	4 2	4 7
Sodium	mg/l Na	26	15 0	20 4	30/07	11 4	14/05	12 9	10 3	12 7	16 4	13 1	12 6	13 4	12 7

Tamar at Gunnislake Newbridge 1990

Harmonised monitoring station number : 09 017
Measuring authority NRA-SW NGR : 20 (SX) 433 722

Flow measurement station : 047001 - Gunnislake
C.A.(km²) : 916.9 NGR : 20 (SX) 426 725

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	12.1	19 3	16/07	5.1	11/12	11 4	4 9	11 0	19 0	6 8	12 6	16 3	9 5
pH	pH units	26	7.3	7.8	30/03	6 7	15/11	7 4	6 8	7 4	8 2	7.2	7.5	7 5	7 2
Conductivity	µS/cm	26	202	229	21/08	177	08/02	180	140	179	235	167	183	198	176
Suspended solids	mg/l	26	47.6	570 0	26/10	0 8	27/09	24.7	2 0	7.1	111 1	29 7	12 2	13.1	37 3
Dissolved oxygen	mg/l O	26	10 00	12 50	11/12	8 00	29/08	10 7	8 7	10 7	12 5	11 8	10 5	9 8	10 8
BOD (inhibited)	mg/l O	26	2 1	13 0	26/10	0.6	12/07	2 3	0 8	2 0	5 0	2.2	2 2	1 9	2 4
Tot diss org carbon	mg/l O	25	5.0	14 7	26/10	1.9	19/03	11.7	5 1	9 9	25 6	9 5	11 3	11 5	13 2
Ammoniacal nitrogen	mg/l N	26 (1)	0 076	0 320	26/10	<0 010	19/03	0 08	0 01	0 05	0 24	0 10	0 06	0 06	0 10
Nitrite	mg/l N	26 (1)	0 031	0 100	26/10	<0 010	19/03	0 02	0 01	0 02	0 06	0 03	0 02	0 02	0 03
Nitrate	mg/l N	26	2 63	4 20	19/02	1.50	27/09	2 6	1.5	2 5	4 1	3 2	2 6	2 1	2 8
Chloride	mg/l Cl	26	27 4	33 0	11/12	24 0	23/01	22 3	18 0	22 0	28 0	23 1	21 4	22 6	23 1
Total alkalinity	mg/l $CaCO_3$	26	37 2	52 0	08/06	21.0	30/01	36 3	22 9	35 0	53 0	30 5	39 6	42 7	33 5
Orthophosphate	mg/l P	26	0 107	0 330	26/10	0 040	19/04	0 08	0 03	0 07	0 15	0 06	0 08	0 11	0 08
Silica	mg/l SiO_2	26	4 42	6 40	04/12	0 60	19/04	4 85	1 49	5 10	6.70	5 12	3 93	4 59	5 58
Sulphate	mg/l SO_4	26	16 6	20 4	27/06	11 4	30/01	15 9	11 0	15.5	21 0	14 9	16 3	17.1	15 3
Calcium	mg/l Ca	26	17.6	20 7	22/05	13 9	26/10	17 8	14 0	17 4	22 0	16 7	17 3	18 5	16 9
Magnesium	mg/l Mg	26	5 1	6 3	21/08	3 8	08/02	4 8	3 4	4 7	6 5	4 2	5 0	5 4	4 5
Potassium	mg/l K	26	3.5	8 3	26/10	2 0	19/03	3 2	1 9	3 0	5 3	2 7	2 9	4 0	3 4
Sodium	mg/l Na	26	14 7	18.7	21/08	12.1	23/01	12 2	9 4	12 1	15 0	12.1	12 1	13 1	12.2

Exe at Thorverton Road Bridge 1990

Harmonised monitoring station number : 09 036
Measuring authority : NRA-SW NGR : 21 (SS) 936 016

Flow measurement station : 045001 - Thorverton
C.A.(km²) : 600.9 NGR 21 (SS) 936 016

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	26	11 0	18 0	22/08	5 0	07/12	11 2	4 4	10 5	19 0	5 9	12 5	16 5	9 1
pH	pH units	26	7 4	7 9	17/08	7.1	12/12	7 5	6 9	7 5	8 1	7 4	7 7	7 6	7 4
Conductivity	µS/cm	26	179	285	15/02	115	06/07	172	123	162	243	158	182	188	160
Suspended solids	mg/l	26	9 8	58 0	15/02	1 0	22/08	12.0	2 0	5 1	42 0	15 6	8 5	6 7	12 7
Dissolved oxygen	mg/l O	26	10 28	12 40	23/03	8 10	24/05	11 0	8 7	11 2	13 2	12 4	11 0	9 7	11 3
BOD (inhibited)	mg/l O	26	1 7	3 3	26/04	0 7	27/11	1 8	0 8	1 8	3 3	1 7	2 1	1 6	1 5
Tot diss org carbon	mg/l O	26	2 7	5 0	22/08	1 2	07/12	7 7	4 0	7 0	13 9	5.9	7 9	8 3	7 5
Ammoniacal nitrogen	mg/l N	26 (1)	0 052	0 130	15/02	0 010	23/03	0 07	0 01	0 05	0 17	0 08	0 07	0 05	0 05
Nitrite	mg/l N	26	0 022	0 058	24/05	0 008	24/01	0 02	0 01	0 02	0 05	0 02	0 03	0 03	0 02
Nitrate	mg/l N	25	2 55	4 70	05/03	0 90	06/07	2 4	1 4	2 3	3 5	2 8	2 5	2 0	2 4
Chloride	mg/l Cl	26	20 9	32 8	15/02	15 0	06/07	17.9	13 0	17 0	27 0	17 2	17 6	19 0	16 5
Total alkalinity	mg/l $CaCO_3$	28	34 9	54 0	14/08	19 0	30/10	40 7	24 0	38 1	65 9	33 7	45 8	48 0	36 2
Orthophosphate	mg/l P	26	0 098	0 250	24/05	0 030	27/11	0 12	0 03	0 08	0 30	0 07	0 12	0 19	0 09
Silica	mg/l SiO_2	26	3 96	7 80	15/02	0 50	26/04	3 98	1 60	4 20	5 30	4 51	3 13	3 52	4 83
Sulphate	mg/l SO_4	26	16 0	34 0	24/05	9.3	22/11	14 0	9 4	12 8	23 0	12 3	13 8	14 5	13 4
Calcium	mg/l Ca	25	16 3	31 1	15/02	9 0	06/07	16 9	11 8	16 1	24 0	15 8	18 3	17 8	15 1
Magnesium	mg/l Mg	25	3 8	6 1	15/02	2.4	06/07	4 1	2 9	4 0	5 4	3 8	4 5	4 4	3 8
Potassium	mg/l K	25	1.9	3 7	15/02	1 3	07/12	2 1	1 3	1 9	3 6	1 9	2 1	2 4	1 9
Sodium	mg/l Na	25	12.5	22.7	24/05	7 9	24/01	10 6	7 1	9.5	18 8	9 3	10 9	12 9	9 8

Dee at Overton 1990

Harmonised monitoring station number : 10 002
Measuring authority NRA-WEL NGR 33 (SJ) 354 427

Flow measurement station 067015 - Manley Hall
C A (km²) : 1019.3 NGR : 33 (SJ) 348 415

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	11	12 0	17 3	13/07	7 4	20/04	10 0	3 0	9 9	17 5	4 8	11 6	15 2	7 8
pH	pH units	11	7 4	8 1	03/12	7 0	13/02	7 2	6 5	7 2	7 8	7 1	7 3	7 3	7 1
Conductivity	µS/cm	11	193	340	03/12	110	13/02	172	98	163	270	158	214	172	143
Suspended solids	mg/l	11 (2)	4 9	12.0	13/02	1 0	20/04	8 9	1 0	3 1	37 8	11 4	6 8	6 9	11 0
Dissolved oxygen	mg/l O	9	10 83	11 90	03/12	9 44	11/06	11 1	9 1	11 1	13 2	12 5	10 7	9 7	11 7
BOD (inhibited)	mg/l O	11 (3)	1 2	2 4	11/06	0 5	20/04	1 2	0 5	1 1	2 5	1.2	1 5	1 2	1 1
Ammoniacal nitrogen	mg/l N	12 (2)	0 065	0 110	13/07	0 010	05/10	0 05	0 01	0 03	0 14	0 06	0 05	0 04	0 06
Nitrite	mg/l N	12 (1)	0 017	0 034	08/05	0 002	05/10	0 02	0 01	0 01	0 05	0 02	0 03	0 02	0 02
Orthophosphate	mg/l P	12 (1)	0 069	0 130	11/06	0 020	05/10	0 05	0 01	0 05	0 14	0 05	0 06	0 07	0 06

Taf at Clog-y-fran Bridge 1990

Harmonised monitoring station number 10 027
Measuring authority NRA-WEL NGR : 22 (SN) 238 161

Flow measurement station 060003 - Clog-y-fran
C A (km²) : 217.3 NGR : 22 (SN) 238 160

Determinand	Units	1990 Samples	Mean	Max	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	25	11.3	19 0	20/07	7 0	10/12	10 4	3 8	10 0	17.5	6.4	11 9	14 8	8 5
pH	pH units	24	7.5	8 2	05/09	6 5	17/01	7 4	6 9	7 4	7 9	7 2	7 5	7 5	7 2
Conductivity	µS/cm	12	213	307	14/05	144	03/12	165	115	156	248	143	174	196	149
Suspended solids	mg/l	24 (6)	17 2	118 0	15/10	5 0	20/04	15 5	1 4	6 2	60 0	26 5	8 5	10 9	20 1
Dissolved oxygen	mg/l O	24	9 89	13 80	11/04	7.50	15/10	10 3	7.5	10 5	12.7	10 9	10 7	9 3	10 6
BOD (inhibited)	mg/l O	15	2 0	5.1	15/10	0 2	22/10	1 8	0 8	1 8	3 6	1.9	2 0	1.5	1 5
Ammoniacal nitrogen	mg/l N	24	0 133	0 730	30/07	0 010	11/04	0 11	0 02	0 08	0 34	0 18	0 13	0 07	0 11
Nitrite	mg/l N	24	0 039	0 143	17/01	0 011	11/04	0 03	0 01	0 03	0 07	0 03	0 03	0 04	0 03
Orthophosphate	mg/l P	12 (1)	0 240	0 820	20/07	0 050	17/01	0 12	0 03	0 08	0 39	0 07	0 16	0 21	0 07

Carron at A890 Road Bridge — 1990

Harmonised monitoring station number: 11 009
Measuring authority HRPB NGR 18 (NG) 938 425

Flow measurement station: 093001 - New Kelso
C.A (km²) 137.8 NGR: 18 (NG) 942 429

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1979 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	8 9	17 0	18/07	3 8	22/02	8 5	2 5	8 4	15 2	3 8	11 2	12 9	7 0
pH	pH units	12	6 2	7 3	18/04	5 5	18/07	6 6	5 9	6 6	7 4	6 7	6 7	6 7	6 5
Conductivity	µS/cm	12	46	6*	07/11	37	06/12	44	28	43	65	50	47	41	38
Suspended solids	mg/l	12 (1)	1 1	2 3	22/02	0 4	23/01	1 5	0 3	1 1	4 4	1 8	1 2	1 3	1 5
Dissolved oxygen	mg/l O	12	10 84	12 24	22/02	9 25	18/07	11 3	9 8	11 3	13 0	12 6	10 9	10 2	11 4
BOD (inhibited)	mg/l O	12	0 8	1 5	22/02	0 4	23/08	0 9	0 3	0 9	1 4	0 9	0 7	0 8	1 0
Ammoniacal nitrogen	mg/l N	12 (1)	0 007	0 017	23/01	0 002	13/03	0 01	0 00	0 01	0 03	0 01	0 01	0 01	0 01
Nitrite	mg/l N	12 (2)	0 001	0 002	06/12	0 001	18/04	0 01	0 00	0 01	0 01	0 01	0 01	0 01	0 01
Nitrate	mg/l N	12	0 05	0 12	18/07	0 03	16/10	0 1	0 0	0 1	0 1	0 1	0 1	0 0	0 0
Chloride	mg/l Cl	12	10 8	16 6	23/01	8 0	23/08	10 5	5 9	9 5	18 2	13 9	10 6	8 0	9 1
Total alkalinity	mg/l $CaCO_3$	12 (1)	3 8	7 8	18/04	0 5	16/10	6 0	1 6	5 0	12 5	5 4	6 6	6 3	5 6
Orthophosphate	mg/l P	11 (7)	0 004	0 006	20/06	<0 003	18/04	0 00	0 00	0 00	0 01	0 00	0 00	0 01	0 00
Sulphate	mg/l SO_4	11 (4)	0 8	2 3	06/12	0 3	18/07	2 3	0 3	2 0	5 7	2 6	2 2	2 0	2 3
Calcium	mg/l Ca	12	2 1	3 0	18/07	1 4	13/03	1 8	0 6	1 6	4 0	1 4	2 7	1 9	1 5
Magnesium	mg/l Mg	12	1 0	1 2	23/01	0 8	16/10	1 4	0 5	1 0	2 9	1 3	1 1	2 2	1 0
Potassium	mg/l K	12	0 3	0 4	23/01	0 2	23/08	0 3	0 2	0 3	0 5	0 4	0 4	0 3	0 3
Sodium	mg/l Na	12	5 3	7 3	23/01	4 3	06/12	4 6	2 9	4 2	8 2	5 1	5 6	4 2	4 0

Spey at Fochabers — 1990

Harmonised monitoring station number 12 002
Measuring authority NERPB NGR 38 (NJ) 341 596

Flow measurement station: 008006 - Boat o Brig
C.A (km²) 2861 2 NGR: 38 (NJ) 318 518

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	6	8 9	16 0	08/08	5 0	29/11	10 3	2 0	11 0	18 0	3 4	10 1	15 0	6 3
pH	pH units	6	6 8	7 4	11/10	6 5	22/02	7 2	6 4	7 2	7 8	6 9	7 2	7 5	7 0
Conductivity	µS/cm	6	78	99	08/08	46	22/02	76	50	76	103	80	70	84	71
Suspended solids	mg/l	6	3 2	8 0	05/06	0 1	29/11	4 1	0 1	2 0	18 0	3 1	4 0	3 8	3 9
Dissolved oxygen	mg/l O	6	11 61	12 64	29/11	10 50	05/06	11 3	9 3	11 3	13 5	12 7	11 1	9 9	11 7
BOD (inhibited)	mg/l O	5	0 9	1 6	05/06	0 4	29/11	0 9	0 4	0 9	1 4	0 8	1 0	0 9	0 9
Ammoniacal nitrogen	mg/l N	6	0 017	0 028	08/08	0 002	05/04	0 04	0 00	0 02	0 12	0 02	0 04	0 04	0 03
Nitrite	mg/l N	6	0 006	0 018	05/06	0 001	05/04	0 01	0 00	0 01	0 01	0 01	0 01	0 01	0 01
Nitrate	mg/l N	6	0 75	0 52	29/11	0 12	05/06	0 3	0 2	0 3	0 7	0 4	0 3	0 3	0 3
Chloride	mg/l Cl	6	9 2	12 0	05/04	7 0	11/10	10 3	6 0	10 0	15 0	12 2	10 0	10 5	9 2
Total alkalinity	mg/l $CaCO_3$	6	17 0	27 0	08/08	6 0	22/02	25 4	15 0	25 0	39 7	23 7	24 5	29 3	26 8
Orthophosphate	mg/l P	6	0 008	0 017	08/08	0 001	05/06	0 02	0 00	0 01	0 08	0 02	0 02	0 04	0 02
Silica	mg/l SiO_2	6	5 54	7 58	29/11	3 72	22/02	5 63	3 66	5 82	7 15	5 51	4 66	5 54	6 10

Almond at Craigiehall — 1990

Harmonised monitoring station number 14 008
Measuring authority FRPB NGR 36 (NT) 165 752

Flow measurement station: 019001 - Craigiehall
C.A.(km²) 369.0 NGR: 36 (NT) 165 752

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	27	12 4	22 0	02/08	4 0	15/02	9 6	2 5	9 5	18 0	4 1	11 9	14 7	7 3
pH	pH units	21	7 7	8 1	20/06	7 3	15/02	7 6	7 0	7 6	8 0	7 4	7 7	7 6	7 5
Conductivity	µS/cm	21	645	1020	02/08	350	17/01	603	315	590	880	515	698	658	520
Suspended solids	mg/l	21	12 2	52 0	15/03	3 0	08/11	22 6	2 1	10 9	63 1	34 9	10 2	14 1	27 5
Dissolved oxygen	mg/l O	19	8 61	11 70	15/02	3 80	26/06	9 3	5 3	9 5	12 2	11 3	9 2	7 2	9 7
BOD (inhibited)	mg/l O	21	3 5	7 8	26/06	1 5	06/02	3 3	1 6	2 8	6 7	3 2	3 6	3 1	3 1
Ammoniacal nitrogen	mg/l N	20	1 279	3 400	11/07	0 280	11/01	1 21	0 23	0 93	3 10	1 25	1 52	1 13	0 90
Nitrite	mg/l N	9	0 363	0 890	26/06	0 090	15/02	0 27	0 03	0 15	0 77	0 15	0 32	0 45	0 15
Nitrate	mg/l N	9	4 26	6 20	08/08	2 30	15/03	3 8	2 1	3 6	5 7	3 5	4 1	3 8	3 7
Total alkalinity	mg/l $CaCO_3$	20	114 6	148 0	31/05	61 0	17/01	120 9	55 0	124 0	190 0	100 4	141 6	133 0	104 0
Orthophosphate	mg/l P	12	0 924	2 380	28/08	0 060	17/01	0 75	0 10	0 48	2 10	0 28	0 94	1 27	0 43
Sulphate	mg/l SO_4	9	125 7	212 0	08/08	60 0	17/01	131 0	56 0	132 0	200 0	109 7	138 2	145 3	116 7

Tweed at Norham — 1990

Harmonised monitoring station number 15 001
Measuring authority TWRPB NGR 36 (NT) 898 477

Flow measurement station 021009 - Norham
C.A.(km²) 4390 0 NGR 36 (NT) 898 477

Determinand	Units	1990 Samples	Mean	Max	Date	Min.	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	10 3	21 0	30/07	2 0	20/11	10 0	2 5	9 5	20 0	4 3	13 3	16 1	6 5
pH	pH units	12	8 1	9 5	30/07	7 3	23/10	8 0	7 1	7 9	9 2	7 6	8 3	8 5	7 7
Conductivity	µS/cm	12	270	281	26/06	176	22/02	234	165	227	310	239	234	224	239
Suspended solids	mg/l	12	7 1	34 0	25/09	1 0	28/08	9 9	1 1	5 0	32 0	16 5	5 3	7 4	10 5
Dissolved oxygen	mg/l O	12	10 84	13 50	30/07	8 70	25/09	11 6	9 1	11 5	15 3	12 0	11 7	11 5	11 5
BOD (inhibited)	mg/l O	12	2 5	5 5	25/09	1 4	23/10	2 3	1 0	2 2	4 0	2 3	2 5	2 5	1 9
Ammoniacal nitrogen	mg/l N	12	0 070	0 150	10/01	0 040	20/11	0 09	0 03	0 08	0 16	0 11	0 08	0 08	0 09
Nitrite	mg/l N	12 (2)	0 013	0 030	22/05	0 005	26/06	0 02	0 01	0 02	0 05	0 02	0 02	0 02	0 02
Nitrate	mg/l N	12	1 78	2 40	17/12	0 25	30/07	1 8	0 8	1 7	3 4	2 5	1 8	1 1	1 8
Chloride	mg/l Cl	12	15 3	21 5	17/12	11 5	20/11	16 0	10 5	16 0	22 5	17 5	16 5	15 8	15 0
Orthophosphate	mg/l P	11	0 060	0 140	28/08	0 020	30/07	0 14	0 03	0 08	0 43	0 15	0 13	0 16	0 16

Dee at Glenlochar 1990

Harmonised monitoring station number 16 005
Measuring authority SRPB NGR : 25 (NX) 733 642

Flow measurement station 080002 - Glenlochar
C.A.(km²) 809.0 NGR : 25 (NX) 733 641

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	12	10.5	20.0	01/08	3.0	01/03	10.0	1.5	9.0	20.0	3.6	11.4	16.6	8.3
pH	pH units	12	6.8	6.8	01/05	6.3	01/02	6.7	6.2	6.7	7.3	6.6	6.7	6.9	6.6
Conductivity	µS/cm	12	56	72	01/06	47	01/02	58	40	55	78	55	58	68	61
Suspended solids	mg/l	16	2.0	5.0	01/02	1.0	18/12	3.5	1.0	2.0	9.0	5.1	3.8	2.5	2.8
Dissolved oxygen	mg/l O	10	11.09	12.50	01/03	8.70	01/08	10.9	8.7	10.9	13.1	12.4	11.1	9.5	10.7
BOD (inhibited)	mg/l O	12	1.7	2.9	02/10	0.8	01/08	1.9	1.1	1.9	3.1	2.0	1.9	1.8	1.8
Ammoniacal nitrogen	mg/l N	16	0.053	0.090	18/12	0.030	17/10	0.06	0.01	0.04	0.15	0.06	0.06	0.07	0.05
Nitrate	mg/l N	12	0.29	0.58	03/01	0.05	01/08	0.3	0.1	0.3	0.7	0.5	0.3	0.2	0.3
Chloride	mg/l Cl	12	10.6	12.7	01/03	8.7	01/08	8.9	5.0	8.8	13.8	9.6	9.4	8.8	8.3
Orthophosphate	mg/l P	18(1)	0.007	0.050	02/10	<0.001	02/04	0.01	0.00	0.01	0.04	0.01	0.01	0.02	0.01
Silica	mg/l SiO_2	12(1)	1.76	3.10	03/12	<0.10	02/07	2.36	0.40	2.35	4.50	3.47	1.68	1.36	3.03
Sulphate	mg/l SO_4	12	4.5	5.8	03/01	3.8	01/08	5.9	2.1	5.6	10.2	5.6	5.4	6.0	6.6
Calcium	mg/l Ca	12	3.2	5.0	03/12	1.7	01/05	3.8	2.4	3.4	6.0	3.5	3.5	4.9	3.8
Magnesium	mg/l Mg	12	1.4	1.8	03/12	0.8	01/05	1.4	0.7	1.4	2.2	1.4	1.5	1.5	1.4
Potassium	mg/l K	12	0.5	0.8	03/12	0.2	01/05	0.5	0.4	0.5	0.8	0.6	0.5	0.5	0.5
Sodium	mg/l Na	12	5.8	7.1	01/06	3.2	01/05	4.8	3.4	4.5	7.0	5.2	5.2	4.6	4.3

Leven at Renton Footbridge 1990

Harmonised monitoring station number 17 005
Measuring authority CRPB NGR 26 (NS) 389 783

Flow measurement station : 085001 - Linnbrane
C.A.(km²) 784.3 NGR : 26 (NS) 394 803

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1975 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	11	9.8	15.0	27/08	5.0	28/02	9.4	2.0	9.0	17.0	3.9	11.0	15.0	8.3
pH	pH units	11	7.0	7.3	27/08	6.4	22/03	7.1	6.7	7.1	7.5	7.0	7.2	7.1	7.0
Conductivity	µS/cm	9	68	85	26/01	61	25/04	72	60	70	95	72	74	71	72
Suspended solids	mg/l	11	3.7	9.0	28/02	1.0	23/10	4.9	1.0	4.0	13.0	7.0	4.0	4.0	4.6
Dissolved oxygen	mg/l O	11	10.81	12.00	26/01	9.60	27/08	11.0	9.3	11.0	12.7	12.3	11.3	9.7	10.7
BOD (inhibited)	mg/l O	11	1.9	3.2	29/07	1.4	28/09	1.8	0.9	1.8	2.9	2.2	2.1	1.4	1.6
Ammoniacal nitrogen	mg/l N	11(2)	0.038	0.110	27/08	0.010	25/12	0.05	0.01	0.02	0.23	0.05	0.05	0.05	0.05
Nitrite	mg/l N	11(1)	0.013	0.030	21/11	0.010	26/01	0.01	0.01	0.01	0.02	0.01	0.01	0.01	0.01
Nitrate	mg/l N	11	0.28	0.46	27/08	0.10	23/10	0.3	0.1	0.3	0.5	0.4	0.3	0.2	0.3
Total alkalinity	mg/l $CaCO_3$	10	13.8	17.0	25/04	12.0	21/11	16.4	10.0	16.0	22.0	15.0	16.5	17.1	16.9
Orthophosphate	mg/l P	10(7)	0.007	0.025	26/01	0.002	25/04	0.02	0.00	0.01	0.05	0.02	0.02	0.02	0.02

Ballinderry at Ballinderry Bridge 1990

DOE Northern Ireland station number 03/07/Q001
Measuring authority DOEN NGR *23 (IH) 927 798*

Flow measurement station : 203012 - Ballinderry Br.
C.A.(km²) 419.5 NGR : *23 (IH) 926 799*

Determinand	Units	1990 Samples	Mean	Max.	Date	Min	Date	Period of record: 1974 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	23	10.3	18.0	19/07	3.0	15/02	9.8	3.0	10.0	17.0	4.9	12.0	14.8	8.0
pH	pH units	24	7.8	7.4	16/10	8.6	18/08	7.7	7.3	7.7	8.3	7.6	7.9	7.8	7.6
Conductivity	µS/cm	24	318	388	06/06	219	31/10	304	215	302	375	278	325	337	291
Suspended solids	mg/l	24	7.0	29.0	31/10	2.0	19/07	9.5	2.0	6.0	32.0	12.9	7.2	7.2	10.1
Dissolved oxygen	mg/l O	24	10.3	12.8	03/01	7.6	02/10	9.9	6.7	9.9	12.5	11.1	9.7	8.5	10.4
BOD (inhibited)	mg/l O	24	2.5	6.1	16/10	1.0	06/12	2.4	1.0	2.0	4.2	2.6	2.7	2.2	2.1
Ammoniacal nitrogen	mg/l N	24	0.32	0.91	16/10	0.03	16/08	0.25	0.04	0.20	0.49	0.34	0.27	0.17	0.23
Nitrite	mg/l N	24	0.06	0.16	02/10	0.02	08/05	0.05	0.02	0.04	0.13	0.03	0.05	0.06	0.05
Chloride	mg/l Cl	24	21.6	32.0	15/02	16.0	05/07	18.8	11.0	18.0	28.0	18.7	18.9	19.4	17.9
Orthophosphate	mg/l P	24	0.23	0.52	03/08	0.02	05/07	0.23	0.07	0.21	0.43	0.15	0.18	0.33	0.19

Lagan at Shaws Bridge 1990

DOE Northern Ireland station number 05/01/Q002
Measuring authority DOEN NGR *33 (IJ) 325 690*

Flow measurement station : 205004 - Newforge
C.A.(km²) 490.4 NGR : *33 (IJ) 329 693*

Determinand	Units	1990 Samples	Mean	Max.	Date	Min.	Date	Period of record: 1973 - 1989 Mean	Percentiles 5%	50%	95%	Quarterly averages J-M	A-J	J-S	O-D
Temperature	°C	23	11.0	17.0	24/08	6.0	10/01	10.4	4.0	10.5	17.0	5.1	12.8	15.5	8.1
pH	pH units	23	7.7	8.0	10/08	7.3	27/06	7.6	7.2	7.6	8.0	7.8	7.6	7.5	7.5
Conductivity	µS/cm	23	449	752	24/01	308	08/02	422	275	402	601	372	444	523	383
Suspended solids	mg/l	23	7.7	34.0	09/03	2.0	24/08	13.9	2.0	7.0	48.0	15.2	8.7	7.4	17.6
Dissolved oxygen	mg/l O	23	10.7	17.4	06/12	5.6	27/06	9.2	3.3	9.8	12.8	12.1	9.5	5.5	10.5
BOD (inhibited)	mg/l O	23	2.7	4.8	27/06	1.0	24/08	3.5	1.3	3.0	7.2	2.9	4.2	3.6	3.1
Ammoniacal nitrogen	mg/l N	23	0.41	0.84	09/04	0.12	23/10	0.97	0.17	0.63	2.6	0.73	0.99	1.69	0.94
Nitrite	mg/l N	23	0.18	0.44	29/05	0.05	07/11	0.20	0.02	0.11	0.50	0.10	0.22	0.38	0.09
Chloride	mg/l Cl	23	44.3	138.0	24/01	26.0	05/07	40.5	21.0	36.0	68.0	34.3	42.2	44.1	33.8
Orthophosphate	mg/l P	23	0.91	2.78	26/07	0.09	08/02	0.92	0.13	0.68	2.30	0.32	1.12	1.30	0.84

DIRECTORY OF MEASURING AUTHORITIES

	Address	Code
National Rivers Authority	Rivers House, Waterside Drive, Aztec West, Almondsbury, Bristol BS12 4UD	NRA
NRA Regional Headquarters		
Anglian	Kingfisher House, Goldhay Way, Orton Goldhay, Peterborough PE2 0ZR	NRA-A
Northumbria	Eldon House, Regent Centre, Gosforth, Newcastle-upon-Tyne NE3 3UD	NRA-N
North West	Richard Fairclough House, PO Box 12, Knutsford Rd, Warrington WA4 1HG	NRA-NW
Severn-Trent	Sapphire East, 550 Streetsbrook Road, Solihull B91 1QT	NRA-ST
Southern	Guildbourne House, Chatsworth Road, Worthing, West Sussex BN11 1LD	NRA-S
South West	Manley House, Kestrel Way, Sowton Industrial Estate, Exeter EX2 7LQ	NRA-SW
Thames	Kings Meadow House, Kings Meadow Road, Reading RG1 8DQ	NRA-T
Welsh	Rivers House/Plas-yr-Afon, St Mellons Business Park, St Mellons, Cardiff CF3 0LT	NRA-WEL
Wessex	Rivers House, East Quay, Bridgwater TA6 4YS	NRA-W
Yorkshire	Rivers House, 21 Park Square South, Leeds LS1 2QG	NRA-Y
River Purification Boards		
Clyde River Purification Board	Rivers House, Murray Road, East Kilbride, Glasgow G75 0LA	CRPB
Forth River Purification Board	Clearwater House, Heriot Watt Research Park, Avenue North, Riccarton, Edinburgh EH14 4AP	FRPB
Highland River Purification Board	Strathpeffer Road, Dingwall IV15 9QY	HRPB
North East River Purification Board	Greyhope House, Greyhope Road, Torry, Aberdeen AB1 3RD	NERPB
Solway River Purification Board	Rivers House, Irongray Road, Dumfries DG2 0JE	SRPB

Tay River Purification Board	1, South Street, Perth PH2 8NJ	TRPB
Tweed River Purification Board	Burnbrae, Mossilee Road, Galashiels TD1 1NF	TWRP

Other measuring authorities

Borders Regional Council (Directorate of Water and Drainage Services)	West Grove, Waverley Road, Melrose TD6 9SJ	BRWD
Corby (Northants) and District Water Company	Geddington Road, Corby, Northants NN18 8ES	CDWC
Department of the Environment for Northern Ireland	Water Service, Northland House, 3 Frederick Street, Belfast BT1 2NS	DOEN
	Environmental Protection Division, Calvert House, 23 Castle Place, Belfast BT1 1FY	
Dumfries and Galloway Regional Council (Department of Water and Sewerage)	Marchmount House, Marchmount, Dumfries DG1 1PW	DGRW
Essex Water Company	Hall Street, Chelmsford CM2 OHH	EWC
Geological Survey of Northern Ireland	20 College Gardens, Belfast BT9 6BS	GSNI
Grampian Regional Council (Water Services Department)	Woodhill House, Westburn Road, Aberdeen AB9 2LU	GRWD
Highland Regional Council (Water Department)	Regional Buildings, Glenurquhart Road, Inverness IV3 5NX	HRCW
Institute of Hydrology	Maclean Building, Wallingford OX10 8BB	IH
Lothian Regional Council (Department of Water and Drainage)	6 Cockburn Street, Edinburgh EH1 1NZ	LRWD
Newcastle and Gateshead Water Plc	PO Box 10, Allendale Road, Newcastle-upon-Tyne NE6 2SW	NGWC
North West Water	Dawson House, Liverpool Road, Great Sankey, Warrington WA5 3LW	NWW
Scottish Hydro-Electric Plc	16 Rothesay Terrace, Edinburgh EH3 7SE	SE
Southern Water	Southern House, Yeoman Road, Worthing BN13 3NX	SW
Strathclyde Regional Council (Water Department)	419 Balmore Road, Glasgow G22 6NU	SRCW
Tayside Regional Council (Water Services Department)	Bullion House, Invergowrie, Dundee DD2 5BB	TRWS
Yorkshire Water	West Riding House, 67 Albion Street, Leeds LS1 5AA	YW

Note: The measuring authorities listed in this directory provide (or have provided) daily flow data to the national archive for primary flow measurement stations. In recent years a number of valuable long records for additional sites have been identified. Most of these will be incorporated into the Surface Water Archive when appraisals of the gauging stations and flow records are complete. Further lengthy records, whether of springs, runoff, river levels, well levels or bourne flow occurrences, would be welcomed and holders of such data are invited to contact the Institute of Hydrology.

PUBLICATIONS - in the Hydrological data UK series

Title	*Published*	*Price* (inclusive of second class postage within the UK)	
Yearbooks:		*Loose-Leaf**	*Bound*
Yearbook 1981	1985	£10	£12
Yearbook 1982	1985	£10	£12
Yearbook 1983	1986	out of print	
Yearbook 1984	1986	out of print	
Yearbook 1985	1987	£12	£15
Yearbook 1986	1988	£12	£15
Yearbook 1987	1989	£12	£15
Yearbook 1988	1989	£12	£15
Yearbook 1989	1990	£15	£18
Yearbook 1990	1991	£15	£18
Reports:			
Hydrometric Register and Statistics 1981-5[1]	1988	£12	£15
The 1984 Drought[2]	1985		£12

Concessionary rates apply to the purchase of two or more of the pre-1988 Yearbooks.

The Yearbooks are available as bound volumes or as sets of pre-punched sheets for insertion in a ring binder designed to hold the five yearbooks in each publication cycle together with the five-yearly catalogue of summary statistics. The ring binder to hold the Yearbooks for 1986-90 may be purchased for £5.

All the Hydrological data UK publications and the ring binder may be obtained from:-

Institute of Hydrology
WALLINGFORD
OXFORDSHIRE OX10 8BB

Telephone: Wallingford (0491) 38800
Fax: (0491) 32256

Enquiries or comments regarding the series, or individual publications are welcomed and should be directed to the Surface Water Archive Office at the above address.

1. Hydrometric Register and Statistics 1981-5

This reference volume includes maps, tables and statistics for over 800 river basins and 150 representative observation boreholes throughout the United Kingdom. The principal objective of the publication is to assist data users in the selection of monitoring sites for particular investigations and to allow more effective interpretation of analyses based upon the raw data. To this end, concise gauging station and catchment descriptions are given for the featured flow measurement stations - particular emphasis is placed on hydrometric performance, especially in the high and low flow ranges, and on the net effect of artificial influences on the natural flow regime.

Summary hydrometric statistics, for each of the years 1981-5, are provided alongside the corresponding long term averages, or extremes, to allow the recent variability in surface and groundwater resources to be considered in a suitable historical context.

Publication of the Hydrometric Register and Statistics volume for 1986-1990 is scheduled for 1992.

*The loose-leaf version of the Yearbooks will be discontinued after the 1990 edition.

2. The 1984 Drought

This first, occasional report in the Hydrological data UK series concerns the 1984 drought. The report documents the drought in a water resources framework and its development, duration and severity are examined with particular reference to regional variations in intensity. Assessments are made of the likely frequency of occurrence of the drought and its magnitude is considered both in the perspective provided by historical records of rainfall and runoff, and in the context of the recent somewhat erratic climatic behaviour.

Representative Basin Catalogue

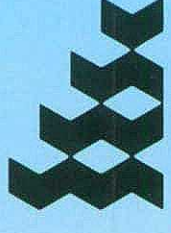
Data collection for the national Flood Event Archive, maintained by the Institute of Hydrology, concentrates on a selection of basins that form a representative sample of UK catchments. A catalogue providing comprehensive hydrological and reference information for 200 representative basins has been prepared and is available as national (three volumes) or regional sets; user-selected groups of catchments can be provided for particular investigations.

Enquiries concerning the cost and availability of the catalogue should be directed to the Flood Modelling Section at the above address.

ABBREVIATIONS

Note: The following abbreviations do not purport to represent any standardised usage; they have been developed for use in the Hydrological data UK series of publications only. Where space constraints have required alternative forms of these conventional abbreviations to be used, the meaning should be evident from the context.

AOD	Above Ordnance Datum
Bk	Beck
Blk	Black
Br	Bridge
Brk or B	Brook
Brn	Burn
Ch	Channel
C/m	Current meter(ing)
Com	Common
Dk	Dike
Dr or D	Drain
D/s	Downstream
DWF	Dry weather flow
E	East
Frm	Farm
G/s	Gauging station
Gw	Groundwater
HEP	Hydro-electric power
Ho	House
Hosp	Hospital
L	Loch or lake
Lb	Left hand river bank (looking downstream)
Ln	Lane
Lst	Limestone
Ltl	Little
MAF	Mean annual flood
Mkt	Market
Ml/d	Megalitres per day
Mnr	Manor
N	North
Ntch	Notch
NW	North-West
O/f	Outfall or outflow
ORS	Old Red Sandstone
Pk	Park
Pop	Population
POR	Period of record
PS	Pumping station
Pt	Point
PWS	Public water supply
Rb	Right hand river bank (looking downstream)
R/c	Racecourse
RCS	Regional communications system
Rd	Road
Res	Reservoir
Rh	Right hand
S	South
SAGS	Stour Augmentation Groundwater Scheme
Sch	School
S-D	Stage-discharge relation
SDD	Scottish Development Department
SE	South-East
Sl	Sluice
SOE	The Scottish Office Environment Department (previously SDD)
Sp	Spring
St	Stream
STW	Sewage treatment works
SW	South-West
TS	Transfer scheme
US	Ultrasonic gauging station
U/s	Upstream
W	West
W'course	Watercourse
Wd	Wood
Wht	White
Wr	Weir
WRW	Water reclamation works
Wtr	Water
WTW	Water treatment works



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